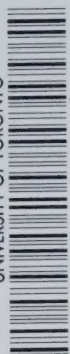


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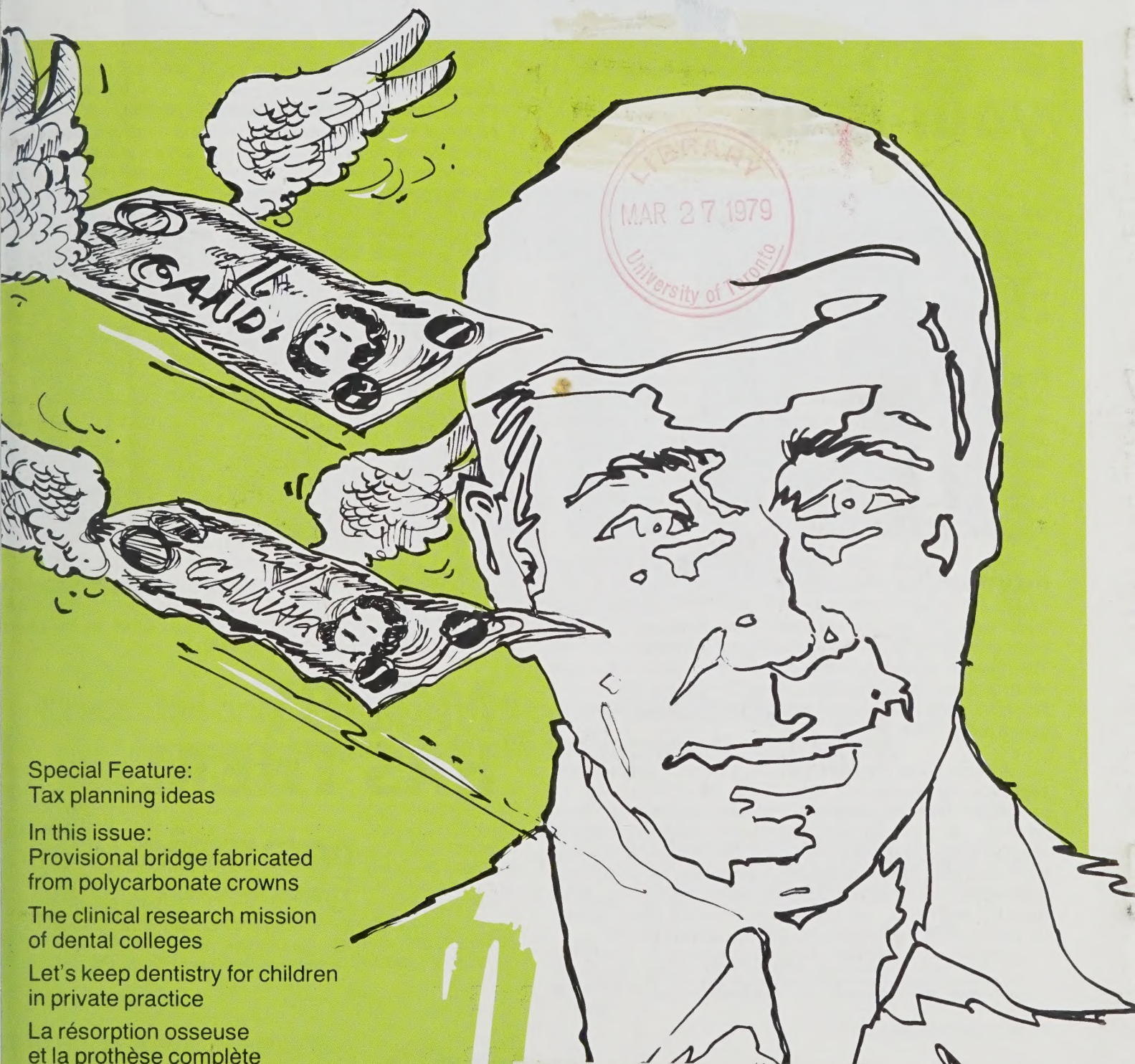
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Canadian Dental Association/Association Dentaire Canadienne



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Announcements/Avis

We urge readers to confirm meeting dates with the contact listed with each announcement.

Canadian Dental Association

1979 National Convention, Quebec City, September 9-12. Contact: Dr. Clément Caron, Convention Chairman, 1979 CDA National Convention, 1575 St. Louis Road, Sillery, Quebec G1S 1G4. Telephone: (418) 527-8969 or 687-5271.

Association Dentaire Canadienne

Congrès national 1979, Québec, 9-12 septembre. Pour renseignements: Dr. Clément Caron, directeur général, congrès 1979 de l'ADC, 1575 chemin St-Louis, Sillery, Québec G1S 1G4. Téléphone: (418) 527-8969 ou 687-5271.

Canadian Meetings

Calgary and District Dental Society Banff Seminar, March 2-4, 1979. Speaker: Dr. Ken Olson. Contact: Dr. Richard Odland, President, Calgary and District Dental Society, 615, 906-8 Avenue S.W., Calgary, Alberta T2P 1H9.

Third Canadian Congress of Dentistry for Children, Vancouver, April 6-8, 1979. Contact: Dr. G. M. Jinks, Suite 301, 1701 West Broadway, Vancouver, British Columbia V6J 1Y3.

Ontario Dental Association, 112th Spring Meeting, Sheraton Centre, Toronto, May 13-16, 1979. Contact: Mrs. W. C. Durham, 234 St. George Street, Toronto, Ontario M5R 2P2.

Les Journées Dentaires du Québec, Queen Elizabeth Hotel, Montreal, May 27-31, 1979. Contact: Dr. Morton R.

Lang, 5253 Decarie Blvd., Montreal, Quebec H3W 3C3. Telephone: (514) 481-0397.

British Columbia College of Dental Surgeons 1979 Convention, Hotel Vancouver, June 5-8, 1979. Contact: College of Dental Surgeons of British Columbia, 1125 West Eighth Avenue, Vancouver, British Columbia V6H 3N4.

Alberta Dental Association, Annual Convention, Red Deer, Alberta, June 7-9, 1979. Contact: Dr. Ron Gish, Lacombe, Alberta.

Western Canada Dental Society Convention, Hotel Saskatchewan, Regina, June 7-9, 1979. Contact: Dr. T. E. Donavon, 205 McCallum Hill Building, Regina, Saskatchewan S4P 2G6.

7th International Symposium on Dental Hygiene, Vancouver, British Columbia, July 25-28, 1979. Contact: 7th International Symposium on Dental Hygiene, c/o Venue West Ltd., 1704-1200 Alberni Street, Vancouver, British Columbia V6E 1A6.

Canadian Association of Oral and Maxillofacial Surgeons Annual Meeting, Quebec City, September 8-11, 1979. Theme: Maxillofacial Trauma. Contact: Dr. Victor Goodyer, 565 St. Jean, Quebec City, Quebec G1R 1P5.

Canadian Association of Orthodontists, 31st Annual Meeting and Convention, Hotel Frontenac, Quebec City, September 8-9, 1979. Contact: Dr. R. Faith, 605-1538 Sherbrooke Street West, Montreal, Quebec, or Dr. J. J. Schachter, Box 952, Saskatoon, Saskatchewan.

International Meetings

Dental Association of Trinidad and Tobago, 13th Convention, Port-of-Spain, Trinidad, February 18-22, 1979. Contact: Jerome J. Boos, Secretary, 115 Abercromby Street, Port-of-Spain, Trinidad.

Virgin Islands Dental Association Meeting, St. Thomas Sheraton Hotel and Marina, February 29-March 3, 1979. Contact: Virgin Islands Dental Association, c/o Travel Services, Inc., P.O. Box 1691, Charlotte Amalie, V.I. 00801.

International Conference on Oral Implantology, Jerusalem, Israel, April 1-5, 1979. Contact: Conference Travel of Canada Ltd., 11 Adelaide Street West, Suite 903, Toronto, Ontario M5R 1L9.

British Dental Association Annual Conference, Cardiff, Wales, April 5-8, 1979. Contact: British Dental Association, 64 Wimpole Street, London W1M 8AL.

Asian Pacific Dental Federation, 9th Dental Congress, Merlin Hotel, Kuala Lumpur, Malaysia, April 23-27, 1979. Contact: Dr. Lim Chee Shin, P.O. Box 234, Petaling Jaya Selangor, Malaysia.

Irish Dental Association, Annual Scientific Congress, Waterville Lake Hotel, County Kerry, April 25-28, 1979. Contact: Conference Secretary, Irish Dental Association, 29 Kenilworth Square, Dublin 6, Ireland.

International Dental Congress in the Middle East, Damascus, April 30 - May 2, 1979. Organized by the Syrian and Jordanian Dental Associations with the assistance of the Fédération Dentaire Internationale and the World



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Health Organization. Contact: FDI, 64 Wimpole Street, London W1M 8AL U.K.

American Dental Society of Europe, 85th Meeting, St. Moritz, June 25-29, 1979. Contact: Brian J. Parkins, Society Secretary, 57 Portland Place, London W1N 3AH, England.

Second Asian Pacific Congress in Anxiety and Pain Control in Dentistry, Honolulu, Hawaii, July 2-5, 1979. Contact: Australian Society for the Advancement of Anaesthesia and Sedation in Dentistry, Suite 904, Hooker House, 175 Pitt Street, Sydney, New South Wales 2000.

Society for the Advancement of Anaesthesia in Dentistry, Second International Congress on Modern Pain Control (Sedation, Anaesthesia and Analgesia in Dentistry), Royal Lancaster Hotel, London, England, July 13-16, 1979. Contact: Secretary, SAAD '79, 53 Wimpole Street, London W1M 7DF, England.

7th International Symposium on Dental Hygiene, Vancouver, British Columbia, July 25-28, 1979. For details see listing under "Canadian Meetings".

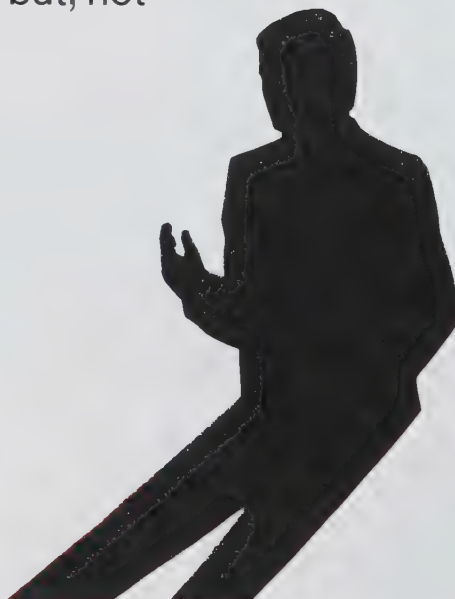
Fédération Dentaire Internationale, 67th Annual World Dental Congress, Paris, France, October 20-26, 1979. Contact: FDI, 64 Wimpole Street, London W1M 8AL, U.K.

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Letter to the editor

CDA Conventions

I wish to comment on the timing of the CDA conventions. Usually, this meeting is held in *early* September, which is an extremely hectic time of the year with most families getting reorganized from recent summer vacations and busy with the start of the new school season.

When I attended the Winnipeg convention I felt there was poor representation from east of Manitoba and a noticeable lack of dental wives.

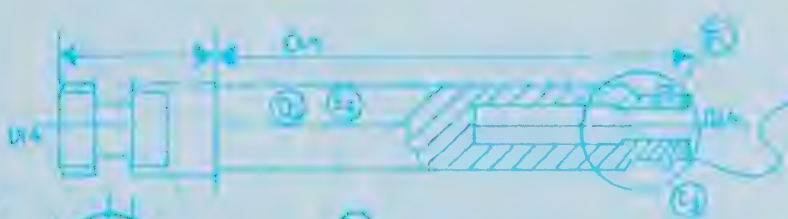
The next CDA convention is scheduled for September 9-12, 1979. Quebec City is a fabulous spot for the convention and I know there are many dentists across Canada who would love to take this opportunity to attend. However, the timing could hurt the registration.

I recommend that the CDA consider the *latter* part of September for its future conventions.

Peter Kalman, DDS
Burlington, Ontario



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LE PRÉSIDENT DE L'ADC S'EN PREND AUX PROPOSITIONS DU MINISTRE FÉDÉRAL DES FINANCES

*L'honorable Jean Chrétien
Ministre des Finances
Ottawa, Ontario*

Monsieur le Ministre,

L'Association Dentaire Canadienne a été très ébranlée par la disposition contenue dans le récent budget à l'effet qu'un grand nombre de corporations de bonne foi ne seraient plus admissibles aux déductions applicables aux petites entreprises, les pénalisant par le fait même, ainsi que leurs actionnaires, de mener des affaires par l'entremise d'une entité corporative.

Vos mesures législatives proposées à cette fin non seulement empêcheraient des nombreuses entreprises offrant des

services authentiques de bénéficier du dégrèvement accessible aux petites entreprises, mais les pénaliseraient en outre d'une autre façon, car il semble que ces corporations ne seront pas admissibles au remboursement prévu sur les impôts versés sur les revenus d'entreprises. S'il s'agissait d'entreprises sans véritable raison d'être et sans activité précise, nous pourrions peut-être comprendre l'objectif de certaines de vos propositions et votre désir de mettre fin à une situation douteuse.

Nous mettons fortement en doute le bien-fondé de ce changement d'orientation de la politique fiscale fédérale. Nous insistons sur le fait que les petites sociétés menant des opérations

commerciales légitimes ne devraient pas être soumises à un régime fiscal différent par le seul fait que leurs opérations ont un lien avec une pratique professionnelle.

Nous vous demandons donc de procéder sans tarder à un nouvel examen de ces propositions dans l'intérêt des petites entreprises de service au Canada et dans l'optique d'une saine administration gouvernementale dans ce domaine.

Veuillez agréer, Monsieur le Ministre, l'assurance de mes sentiments respectueux.

*Le président de l'Association
Dentaire Canadienne
Dr R.L. Moran*

EXTENSION DE L'ASSURANCE-RESPONSABILITÉ CIVILE PROFESSIONNELLE

Aux termes du Régime national/provincial d'assurance de l'ADC, l'assurance-responsabilité civile professionnelle sera, à l'avenir, maintenue en vigueur pour une période de cinq ans suivant la mort ou la retraite de tout praticien assuré.

Cet important changement entrera en vigueur le 1er janvier 1979 et remplacera la méthode actuelle, aux termes de laquelle tout dentiste ou hygiéniste qui prend sa retraite (ou les héritiers d'un praticien décédé) doit faire séparément une demande et payer une prime supplémentaire pour maintenir son assu-

rance. La nouvelle méthode maintiendra automatiquement la couverture, garantissant ainsi la continuité aux héritiers ou au praticien à la retraite.

Ce développement sera financé au moyen d'une augmentation de cinq (5) pour cent des primes actuelles, à partir du 1er janvier 1979.

Cette modification est nécessaire parce que dans le cas d'un dentiste ou hygiéniste décédés ou à la retraite, une plainte peut être portée contre les héritiers ou le retraité pour un incident survenu au cours de la période active de son exercice. Cette assurance est exi-

gée dans certaines provinces canadiennes et la modification en question, portée au régime d'assurance national/provincial de l'ADC remplira cette exigence.

L'extension de la couverture s'appliquera automatiquement à tout praticien qui participe au Régime au moment de son décès ou de l'expiration de son permis. (L'assurance-responsabilité civile professionnelle ne peut pas s'obtenir en Ontario, car les dentistes de cette province obtiennent leur assurance-responsabilité civile professionnelle par l'entremise de l'organisme d'octroi des permis).

L'AFFILIATION À L'ADC: UN INVESTISSEMENT POUR L'AVENIR

L'affiliation à l'Association dentaire canadienne ne constitue pas seulement une déduction aux fins d'impôts. Elle constitue également. . . *

- * La voix unie des dentistes canadiens.
- * Une représentation coordonnée au gouvernement pour toute question de directive, de taxation et de finance.
- * La représentation de la médecine dentaire canadienne dans le monde de la santé buccale.
- * L'organisme officiel d'agrément des services dentaires hospitaliers, des institutions d'enseignement, des programmes et des cours en hygiène dentaire pour les étudiants.
- * Par l'entremise du Journal et de Communiqué, le véhicule national de communication entre les dentistes, pour faire connaître dans toutes les provinces et régions les dernières nouvelles et la documentation scientifique.
- * Des régimes d'assurance en groupe ainsi que des régimes d'épargne-

retraite avantageux, conçus en vue de vous faire économiser de l'argent.

- * La liaison, à l'échelle nationale, avec d'autres organismes et professions du domaine dentaire.
- * La représentation à l'Organisme international de la normalisation.
- * Des programmes d'acceptation des produits dentaires.
- * La Semaine nationale de la santé dentaire.
- * L'élaboration de programmes dentaires dans le cadre de l'éducation permanente.
- * Un siège social situé à la capitale du pays, dont les vingt-et-un membres du personnel sont à la disposition de la profession.
- * Une bibliothèque nationale de 6,000 livres, un service de films et diverse documentation didactique sur la santé.
- * Des négociations avec les assureurs des tiers.

- * Un congrès national annuel pour les dentistes et les auxiliaires de tout le Canada.
- * Une représentation dynamique dont le but est d'alléger le fardeau de taxation pour la profession dentaire.
- * Des normes d'exercice et un code d'éthique sur lesquels le public peut compter.
- * Dix-neuf conseils et comités qui ont constamment pour objectif le perfectionnement de la profession.
- * Un organisme actif d'étudiants dentaires.
- * Un programme ininterrompu de fluoration.
- * La liaison avec la Fédération dentaire internationale et l'Organisme mondial de la santé.

Votre affiliation nous indique votre appui. Pouvez-vous réellement vous permettre de perdre votre voix?

Le Président

Comité d'affiliation de l'ADC

Dr. Michael J. Crompton

SOCIÉTÉ CANADIENNE DES SCIENCES LÉGALES

La Société canadienne des sciences légales vient de nommer le Dr Robert B. J. Dorion de Montréal au poste de Président. Le Dr Dorion est le premier dentiste nommé président de cet organisme.

La Société a, à son actif, 450 membres du Canada et de l'étranger et représente toute la gamme des spécialités légales. Celle du Dr Dorion est l'odontologie légale.

Diplômé de la Faculté dentaire de l'Université McGill, le Dr Dorion a été le premier dentiste canadien à obtenir l'agrément de l'American Board of Forensic Odontology. Il fait partie du Conseil d'administration de cet organisme et il est également membre (Fellow) de l'American Academy of Forensic Sciences.

Le Dr Dorion enseigne l'odontologie légale aux trois facultés dentaires de la province de Québec et a fait de nombreuses conférences au Canada et aux



Dr. R. B. J. Dorion

États-Unis. Il exerce sa profession dans un cabinet privé à Montréal et travaille, de plus, à titre de consultant en médecine légale au "Laboratoire de médecine légale" au Ministère de la Justice du Québec.

Association des orthodontistes

Voici, ci-dessous, les nouveaux membres de l'exécutif de l'Association des orthodontistes de la Province de Québec: le Dr David J. Flam, Montréal, président; le Dr Jean-Marc Fortin, Laval, président désigné; le Dr Roger Dufresne, Montréal, président sortant; le Dr Stephen Miller, Pointe-Claire, premier vice-président; le Dr René Bourcier, Montréal, deuxième vice-président; le Dr Antoine Beamier, St-Lambert, secrétaire; et le Dr Raymond Asselin, St-Jean, trésorier.

Annonces publicitaires

Les tarifs s'appliquant à toute publicité ou annonce placées dans le Journal de l'Association dentaire canadienne seront augmentés à partir du 1er janvier 1979.

LA FACULTÉ DE MÉDECINE DENTAIRE DE L'UNIVERSITÉ DE MONTRÉAL

La Faculté de Médecine Dentaire de l'Université de Montréal offre les programmes d'études avancées suivants:

1. Le Certificat en pédodontie, donné en deux ans dans le cadre de l'hôpital Ste-Justine pour les enfants, prépare des spécialistes en pédodontie (ce certificat est réservé aux détenteurs du permis d'exercice au Québec).
2. Le Certificat en orthodontie prépare en deux ans à la spécialisation en orthodontie.
3. La Maîtrise ès sciences en ortho-

dontie prépare le candidat en un an, après le certificat ou son équivalent, à l'enseignement et à la recherche en orthodontie.

4. La Maîtrise ès sciences en biologie dentaire prépare en une année des chercheurs et enseignants pour différents secteurs de la biologie dentaire (anatomie — physiologie, pharmacologie — pathologie).

Pour plus de renseignements contacter le secrétariat, Faculté de médecine dentaire, Université de Montréal, Case Postale 6209, Montréal, H3C 3T9.

RÉGIME D'ÉPARGNE-RETRAITE DE L'ADC

Les valeurs respectives du Régime d'épargne-retraite de l'Association Dentaire Canadienne étaient les suivantes au 30 novembre, 1978:

<i>Fonds d'actions ordinaires</i>	\$36.483
<i>Fonds à revenu fixe</i>	\$21.567
<i>Fonds garanti</i>	\$15.207
<i>Fonds de placement équilibré</i>	\$10.960

L'avoir total (valeur marchande) du régime s'élevait à \$31,571,569.69.

Au 31 octobre, 1978, les chiffres du

mois précédent étaient les suivants:

<i>Fonds d'actions ordinaires</i>	\$34.068
<i>Fonds à revenu fixe</i>	\$21.321
<i>Fonds garanti</i>	\$15.112
<i>Fonds de placement équilibré</i>	\$10.605

L'avoir total (valeur marchande) du régime s'élevait à \$30,603,427.26.

Pour obtenir tout renseignement supplémentaire, prière de s'adresser aux: Régimes des rentes et d'assurances subventionnés par l'ADC, 234 rue St. George, Toronto, Ontario M5R 2P2.

Société canadienne d'analgésie

Le Dr Marcel Tenenbaum de Montréal a été nommé président de la Division du Québec de la Société canadienne d'analgésie. Les autres membres élus à l'exécutif pour le mandat 1978-79 sont les suivants: Dr Philip Gampel, premier vice-président; Dr Irwin Margolese, deuxième vice-président; Dr Jacques Monette, secrétaire/trésorier. Le Dr Luc Lavallée de Longueuil, président sortant, servira à titre de consultant.

Association d'orthodontie

L'Association canadienne d'orthodontie vient de nommer son comité exécutif pour le mandat 1978-79. Les membres suivants ont été élus: Dr Robert Faith de Montréal, président; Dr Michael Crompton de Moncton, président-désigné; Dr Rowland Haryett d'Edmonton, vice-président; et le Dr Joseph Schachter de Saskatoon, secrétaire/trésorier.

Académie de pédodontie

Au cours de l'assemblée annuelle de l'Académie canadienne de pédodontie qui a eu lieu à Winnipeg le 11 septembre 1978, les membres suivants de l'exécutif ont été élus: le Dr W. Simpson d'Edmonton, président; le Dr I. Bennett de Halifax, vice-président; et le Dr F. Pulver de Toronto, secrétaire-trésorier. Le Dr D. Kozloff de Montréal occupe le poste de président-sortant.

ASSOCIATION CANADIENNE DES SPÉCIALISTES EN CHIRURGIE BUCCALE ET MAXILLOFACIALE

L'Association canadienne des spécialistes en chirurgie buccale et maxillo-faciale s'est réunie à Winnipeg - Manitoba, à l'occasion de son vingt-cinquième anniversaire.

Lors de cette assemblée, la Société canadienne des chirurgiens buccaux a modifié officiellement son nom en celui d'Association canadienne des spécialistes en chirurgie buccale et maxillo-faciale.

Le Docteur A.P. Angelopoulos d'Athènes — Grèce et le Docteur W.G. Yong de Minneapolis - Minnesota, ont participé à cette assemblée générale à titre de conférenciers invités.

La réunion s'est avérée un succès.

La prochaine convention se tiendra à Québec du 8 au 11 septembre 1979 et le responsable est le Docteur Victor Goodyer, 565, rue St-Jean - Québec.

Conseil exécutif

L'Association canadienne des spécialistes en chirurgie buccale et maxillo-faciale vient de nommer son Conseil exécutif pour l'exercice 1978-79. Il s'agit des personnes suivantes: le Dr Guy Maranda, président; le Dr J.H. Gryfe, président désigné; le Dr Pierre Surprenant, secrétaire; le Dr R.E. Warren, trésorier; et le Dr Victor Goodyer, président du Congrès 1979.

CDA PRESIDENT TAKES ISSUE WITH FEDERAL FINANCE MINISTER

*The Honourable Jean Chrétien
Minister of Finance
Ottawa, Ontario*

Dear Sir:

The Canadian Dental Association is very disturbed with the Budgetary proposal to disqualify a great many bona fide corporate businesses for small business deductions; and in addition to penalize them and their shareholders because they are carrying on businesses through corporate entities.

Your proposed legislation in this regard, if implemented, will not only disqualify many bona fide service

corporations providing non-professional services from qualifying for the small business deduction, but also imposes a further penalty upon them because of the fact that such corporations will not apparently qualify for refundable tax in respect of the tax paid on business income. If such operations had no business purposes whatsoever and were not active in the true sense, then we could perhaps understand certain aspects of your proposals and your desire to eliminate sham situations.

We strongly question the merit of this shift in direction of federal tax policy. Small business corporations

engaged in legitimate business activities ought not, we submit, be afforded different tax treatment because they may be operated in connection with a professional practice.

We request the immediate reconsideration of your foregoing proposals in the best interests of small service businesses in Canada and sound objectives of the government in this regard.

Yours very truly,

*Dr. R. L. Moran
President
Canadian Dental Association*

CFDE INVITES APPLICATIONS FROM DENTAL TEACHERS FOR \$1,500 FELLOWSHIP

The Canadian Fund for Dental Education invites applications from dental teachers for the 1979 fellowship sponsored by Warner-Lambert Canada Limited. March 1, 1979, is the deadline for filing applications.

Purpose of the award is to provide an opportunity for an established teacher in one of the Canadian schools of dentistry to refresh and extend his/her knowledge in any field of dental education and research.

Candidates must be full-time members of the teaching staff of one of the Canadian schools of dentistry with a minimum of five years university teaching experience.

The proposed program of study must

be well defined and minimally it must be of approximately one month's duration. Application by letter giving complete details of the proposed program of study should be sent to the Canadian Fund for Dental Education, Suite 205, 44 Eglinton Avenue West, Toronto, Ontario M4R 1A1, to arrive no later than March 1, 1979. It should be accompanied by a curriculum vitae and a letter of support from the applicant's dean or other appropriate senior university official indicating approval of the study period and its benefits to the university and the individual staff member.

Upon completion of the study period CFDE will require a written report on the experience.

Full particulars of the fellowship may be obtained from the office of the dean in each dental school or the Canadian Fund for Dental Education.

All applications will be carefully reviewed by CFDE's Advisory Committee on Fellowship Selection and the award winner selected for the approval of the Board of Trustees.

The 1978 recipient was Dr. David Donaldson of the University of British Columbia who used the funds to support a period of special study in the Department of Anaesthesiology at the University of California, Los Angeles.

This annual award sponsored by Warner-Lambert Canada Limited was established in 1971.

DALHOUSIE OFFERS COURSE ON CERAMICS IN DENTISTRY

Dr. John W. McLean, OBE, of London, England will offer a continuing education course entitled, "Ceramics in Dentistry" at Dalhousie University, February 12 and 13, 1979. This world recognized authority on Dental Ceramics will cover many aspects of the subject including porcelain jacket crown and metal-ceramic crown preparation for stress control in restoration and tooth structure and resistance to microleakage. He will also cover aesthetics of dental porcelain, atypical preparations, glass ionomer cements and future trends in dental ceramics.

Dr. McLean is a 1948 graduate in dentistry from Guys Hospital, London, and received his Doctor of Science degree from the University of London. Although primarily a private practitioner in London, he has several teaching positions in Great Britain and is currently a consultant and lecturer at

Louisiana State University, School of Dentistry. Dr. McLean has been active in organized professional activities most notably in the area of Dental Materials. He is Chairman, Dental Standards Committee of the British Standards Institution and Chairman of Dental Technical Committee 106 of the International Standards Organization.

Dr. McLean's research has been recognized throughout the world and for it he has been honoured in many ways, including a Fellowship in the American College of Dentists, a Fellowship in the International College of Dentists, honorary memberships in the Academy of Restorative Dentistry, the American Dental Association and the American Academy of Restorative Dentistry. In 1977 he received the Jerome and Dorothy Schweitzer Research Award from the Greater New York Academy of Prosthodontics and

in 1978 he was made an Officer of the Order of the British Empire.

Dr. McLean has lectured extensively in all parts of the world. He has over 50 publications to his credit, most of them reporting original research he has conducted. He is recognized as the developer of alumina reinforced porcelain and the developer of the twin foil technique for reinforcing porcelain jacket crowns and as a major contributor to the understanding of the porcelain to metal bond.

Further information on this course may be obtained from: Dr. D. V. Chaytor, Chairman, Continuing Education Committee, or Kaileen Vaisson, Coordinator, Continuing Education in Dentistry, Dalhousie University, Halifax, Nova Scotia B3H 3J5. Telephone: (902) 424-2277.

FDI GENERAL ASSEMBLY APPROVES POLICY STATEMENT REGARDING INTERNATIONAL YEAR OF THE CHILD

In commemoration of the 20th Anniversary of the Declaration of the Rights of the Child, the United Nations General Assembly adopted 1979 as the International Year of the Child. In keeping with this event and acknowledging the fact that throughout the world there is a serious deficiency in the provision of dental care for children the General Assembly of the Fédération Dentaire Internationale has approved the following policy statement regarding dental care for children:

Preamble

Throughout the world there is a serious deficiency in the provision of dental care for children. Probably in one country only is satisfactory provision made for the dental needs of the young child.

The foundation of the future dental health of the adult is laid down in the pre-school period of life whereby either by social or ethnic training preventive

health habits are established. Such dental habits can minimize the need for dental therapy so that the adult may subsequently enjoy a quality of life unimpaired by dental deficiency or disease.

The consequences of untreated dental disease will result in imperfections of appearance, of function and in the unnecessary exposure to discomfort in both the fit and unfit patient. In the sick patient the consequences of uncontrolled dental disease can be premature death.

Prevention

Personal prevention, which is complemented by public health measures, must rely on social or behavioural motivation to benefit most from professional dental expertise.

Therapy

In the provision of dental therapy the objective should be that the therapy

should be the minimum necessary to effect the avoidance of the consequences of untreated dental disease.

Methods

1. The provision of services for the child may be either by independent general dental practitioners, by salaried dentists or by varying combinations of these two. It is proposed that the basis of dentistry for the child should be by a general dental practitioner who can provide dental counsel and therapy for the whole family unit. Preventive counselling should be on a family basis for greatest effect.
2. A specialist child dental health service could provide a service to those patients who present the practitioner with problems of diagnosis, therapy or of management which are beyond his training or facility. Many patients with medical, physical or mental handi-

Continued next page

capping conditions or diseases justify such special arrangement.

3. In the provision of dental care for the child, attention will need to be paid to the distinct and different needs of the three age groups — pre-school child, school child and adolescent. Each of these require different consideration, whether by practitioner or specialist.

4. Whatever system is adopted, it is important that the child should be in the dental care of the general practitioner at

the onset of puberty. This will encourage the developing adult to regard dentistry as a part of adult behaviour.

Recommendations

1. It is recommended to all governments and to members of health professions that the Year of the Child be marked by the inauguration of more effective long term preventive programs for dental disease in the child

and especially in the pre-school child.

2. It is recommended that appropriate action be taken in undergraduate and postgraduate dental training so that the care of the pre-school child, of the school child and of the adolescent can be provided by dental practitioners at both general and specialist levels.

3. It is recommended that any system of child dental care should ensure an awareness in the developing adult of the value of regular dental consultation.

Amnesty International seeks Canadian dentists

Latin America has long been known as a region of the world in which military regimes predominate. The systematic use of torture by these regimes has increased dramatically over the last few years. This repression has led to a massive exodus of Latin American citizens to various countries, including Canada.

For the last two years Canadian physicians have assisted these refugees in several ways. Medical assessments are performed in order to substantiate allegations of torture by persons applying for refugee status in Canada. Reports are then prepared and are submitted at special immigration hearings. Attendance by the examiner is not necessary. Similar reports prepared by dentists are urgently needed.

Medical treatment of victims of torture is provided when needed. Many of these victims, who are continuing to arrive in Canada, require treatment for severe dental problems often suffered as a result of maltreatment.

Canadian doctors, in cooperation with European physicians, have begun studies on the medical aspects of torture including the development of diagnostic aids. Similar research by dentists is occurring in Denmark and Canadian dentists are needed to collaborate with them.

Interested dentists should contact: Amnesty International, Canadian Medical Group, 2101 Algonquin Avenue, P.O. Box 6033, Station J, Ottawa, Ontario K2A 1T1

LETTERS FROM LIFE INSURANCE AGENTS TERMED "MISLEADING"

Some promotional letters sent to Canadian dentists from Life Insurance agents contain misleading or inaccurate statements about the CDA National/Provincial Insurance Program.

Typical of these letters is the one reproduced on this page, mailed by an agent representing one of Canada's leading insurance companies.

The letter misleads in two ways:

(1) The suggestion that dentists "with less than acceptable health" were excluded from disability insurance during the introduction of the new plan in January, 1978. The fact is that all participants in previous plans were guaranteed the right to continue their insurance regardless of health factors. Members of the profession enrolling for the first time were asked for medical evidence, just as they would be if they sought insurance on the open market.

(2) The statement that your "Group Disability coverage is cancellable". The associations' insurance contracts normally run for a specific time period of from one to three years, depending on the plan. Changes in insurance carriers have actually been to the benefit of the profession, since they are normally made only to obtain lower premiums or more advantageous policy terms. In more than twenty years of steady growth of the profession's insurance activities, there has never been any difficulty in finding insurance companies who are anxious to quote on these plans.

Canadian Dental Service Plans is taking steps with insurance companies to discourage agents from mailing misleading or deceptive letters to the profession. Dentists can assist by sending copies of questionable material to CDSPI.

Dear Dentist.

You have what could be referred to as periodontics of your insurance program.

In short, you have a hidden problem that could be very serious.

Your Group Disability coverage is cancellable. Witness January 1978 your Association Group was replaced by a new insurer and those of you with less than acceptable health were not allowed to participate.

We recommend that instead of renting all of your protection from your

Association for as long as they wish to maintain the lease, that you at least own some of it, which amount will be absolutely guaranteed to be non-cancellable for the life of the contract.

Our first interview will be in the nature of a check up, and you more than most people know the value of that, merely to uncover the seriousness of your personal situation.

I will phone shortly to determine your interest and if sufficient, to arrange a mutually satisfactory time for an appointment.

"KEEP YOUR TEETH HEALTHY FOR A LIFETIME"

THEME FOR NATIONAL DENTAL HEALTH MONTH '79

All ten provincial dental associations, in co-operation with the Canadian Dental Association, the Canadian Dental Hygienists Association and the Canadian Dental Nurses and Assistants Association, will launch a National Dental Health Campaign in April, 1979. Although the entire month of April will be promoted as "Dental Health Month" on a national basis, a number of provinces have chosen to concentrate their efforts on the observance of a "Dental Health Week" during the month.

"Keep your teeth healthy for a lifetime" is the theme for this 1979 campaign — a theme designed to increase awareness of, and promote interest in, good oral hygiene and dental care for people of all ages.

The Canadian Dental Association has co-ordinated this coast-to-coast campaign and provided assistance in the form of a comprehensive program planning kit, available in English and French, distributed to the provinces along with brightly colored posters proclaiming the theme of Dental Health Month/Week 1979.

Planning for this year's campaign actually began for CDA and its provincial members a year ago. Two day-long workshops were held at CDA headquarters by the Council on Information Services for the provincially-appointed Dental Health Month/Week chairmen. Dr. Don Scramstad of Surrey, British Columbia, national chairman, presided over these workshops. The provincial chairmen are: Dr. Jack Lee of Vancouver; Dr. R. D. Sandilands of Edmonton; Dr. R. Harrison of Regina; Dr. W. Wilfred of Winnipeg; Dr. K. Babcock of Oakville, Ontario; Dr. Y. Dufresne of Trois Rivières, Quebec; Dr. E. F. Gaum of Halifax; Dr. G. Glantz of Souris, Prince Edward Island; Dr. P. F. Manson of Fredericton and Dr. R. W. G. Gamble of St.

John's. The representative of the Canadian Dental Hygienists Association is Mrs. F. Bowler of Downsview, Ontario, and Ms. E. Wesley of Lethbridge, Alberta, is the Canadian Dental Nurses and Assistants Association representative.

The program planning kit developed by CDA for Dental Health Month/Week 1979 encompasses the input of the representatives of each province and organization. The kit includes; program planning suggestions; a compilation of media coverage from across Canada which highlighted the 1978 campaign; pamphlets and fact sheets on such topics as fluoridation, mouth protection in contact sports, and how to avoid dental disease; guidelines for participants on television and radio talk shows; newspaper articles; suggestions for talks to elementary school pupils, high school students and adult groups, plus many more ideas geared to make everyone in the community aware of the importance of good dental health.

Each kit also contains an order form for such materials as: nutrition education information available from the Health Protection Branch of the Federal Government and from the Canadian

Dairy Food Service Bureau; dental health publications available from the Canadian Dental Association; dental health films available from both the CDA and the National Film Library; and lapel buttons which bear a picture of Raggedy Ann and the Dental Health Month slogan. These lapel buttons, in English and French, are available from the Canadian Dental Hygienists Association.

The Canadian Dental Association has also developed four 30-second promos in English and French for public service use, year-round, by all radio stations across Canada. Each promo deals with a specific topic determined by the Council on Information Services. They include: periodontal disease; babies' teeth; mouth protection in sports and a general one on care of the teeth. These promos will be launched in time for National Dental Health Month and are available from CDA.

The Canadian Dental Association urges every dentist in Canada to support Dental Health Month or Week in their province. Contact your provincial association and find out how you can help.

CDA Retirement Savings Plan

Unit values of the Canadian Dental Association's Retirement Savings Plan stood as follows on November 30, 1978:

<i>Common Stock Fund</i>	\$36.483
<i>Fixed Income Fund</i>	\$21.567
<i>Guaranteed Fund</i>	\$15.207
<i>Balanced Fund</i>	\$10.960

Total assets (market value) of the plan were: \$31, 571, 569, 69

The previous month's figures, as of

September 30, 1978, stood as follows:

<i>Common Stock Fund</i>	\$34.068
<i>Fixed Income Fund</i>	\$21.321
<i>Guaranteed Fund</i>	\$15.112
<i>Balanced Fund</i>	\$10.605

Total assets (market value) of the plan were \$30, 603, 427, 26.

For further information write to: CDA-sponsored Pension and Insurance Plans, 234 St. George Street, Toronto, Ontario M5R 2P2.

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MARCH 1 IS DEADLINE SET FOR CFDE TEACHER TRAINING FELLOWSHIP APPLICATIONS

The Canadian Fund for Dental Education has announced that applications are now being accepted for teacher/researcher training fellowships for the 1979-80 academic year.

Forms and additional information may be obtained from the dean's office in any Canadian dental school or from the Canadian Fund for Dental Education, Suite 205, 44 Eglinton Avenue West, Toronto, Ontario M4R 1A1.

Conditions

Candidates must be Canadian citizens or landed immigrants who have completed an undergraduate course in dentistry, dental hygiene or a program in science and be eligible for admission to a graduate school.

Applicants must declare their firm intention to become a teacher and/or researcher in a Canadian faculty of dentistry or a school of dental hygiene. Preference will be given to those applicants who will return to a *full-time* teaching/research position. Minimum

commitment in this regard is two days per week. A fellowship recipient is obligated to give a year's full-time service to a school for each year of full fellowship support, or a year's half-time service for each year of half fellowship support. In rare instances where teaching commitments are not fulfilled, fellowship awards must be repaid in full.

Each fellowship is for one year of study at the graduate level. The fellowship may be renewed if progress is satisfactory.

Two types of fellowships are awarded annually:

(a) CFDE Full Fellowship — awarded to applicants who have either a legal or a strong decanal commitment for full-time employment after training.

(b) CFDE Half Fellowship — awarded to applicants who have either a legal or a strong decanal commitment for half-time employment after training

or to applicants who are enrolled in a basic science program (which is only of monetary value if the student obtains university employment after training).

Preference will be given to applicants who begin CFDE supported training before, or less than five years after, starting their teaching/research appointment.

The value of the fellowships will be determined annually by the Advisory Committee on Fellowship Selection and the Board of Trustees.

It is understood that CFDE fellowship recipients will have to obtain additional support from other sources to completely finance their studies.

Since the program was started in 1964, the Fund has awarded 189 fellowships totalling \$513,500 to 121 dentists to help them pursue teaching/research careers. Twenty-seven fellowships totalling \$31,689 have also been awarded to assist 22 dental hygienists to prepare for teaching careers in Canadian schools.



CDA Board of Governors announces interim meeting

The Canadian Dental Association's Board of Governors will hold its interim meeting March 12 and 13, 1979, at the Chateau Laurier Hotel in Ottawa.

The Royal Canadian Dental Corps Association met at Camp Borden October 20-21, 1978. Major Charles Hunt of Toronto succeeded Lieutenant Colonel Alex Mintz of Regina as president. Lt. Col. Mintz (left) is shown presenting the gavel of office to Major Hunt at the Lawrence Craigie Memorial Library at Camp Borden.

INTERNATIONAL PREVENTIVE DENTISTRY AWARDS

A grant from the Johnson and Johnson Dental Products Company of East Windsor, New Jersey, made it possible for the Fédération Dentaire Internationale, to establish International Preventive Dentistry Awards to encourage the development of new and innovative preventive approaches to dental health. These awards provide an opportunity for recognition of dental personnel who have researched, developed and implemented preventive dentistry projects.

A sum of \$2,000 for each award is given at intervals of three years; the first presentation being made in 1977 on the occasion of the Opening Ceremony of the 65th Annual Dental Congress in Toronto, Canada. The next awards will be presented during the 68th Annual Congress in Hamburg, 1980.

Entries are now invited for the following award categories:

Community Programs — covering: preventive approaches used for community education or public information purposes, such as primary and secondary school programs, teaching aids, manuals, publications, research, films, clinics; programs for special population groups — the aged, those in institutions and hospitals, the retarded and handicapped; research, public media and private practitioner's activities in the community.

Professional Education — to include: educational curricula and equipment used by the profession to learn about prevention, such as continuing education, recognized dental society meetings, curriculum changes in dental schools, research and audio-visual aids for use in continuing education or dental schools.

Research — including innovative methodologies and new research findings which will facilitate the prevention of oral disease and improve oral health through such methods as plaque control, caries prophylaxis, prevention of periodontal disease etc.

All entries must be received by the Executive Director of the FDI not later than April 30, 1979. Any dental health worker (including dental and auxiliary students), with experience in the chosen field, who is interested in submitting an entry, should write at once to the Executive Director of the FDI, 64 Wimpole St., London W1M 8AL, UK, for full details as to eligibility and conditions for submission of entries for the Johnson and Johnson International Preventive Dentistry Awards.

More news on page 23

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TAX PLANNING IDEAS

This article was extracted from a tax planning letter prepared by Touche Ross and Company, Chartered Accountants.

If you are concerned about the level of your personal income taxes, you should be thinking now about ways to improve your tax situation. Here is a variety of tax planning ideas to which you should give some thought as soon as possible. But please keep in mind that these are just ideas; before you act on them, you should check the details with a professional tax advisor.

Which steps are urgent?

Planning means looking to the future, and many of the points noted below pertain to steps you can take now or in the near future to improve your tax situation for 1979. On the other hand, there may still be time to do something about your 1978 tax liability; it's too late to contribute for 1978 to a registered home ownership savings plan but you have until the end of February to contribute to a registered retirement savings plan or to purchase an income-averaging annuity contract.

In any event, please read on and see whether any of the ideas discussed could or should apply to you.

INVESTMENT INCOME

Investment income deduction

Except for the new dividend tax credit formula discussed below, there has been little change recently in the taxation of investment income received by individuals. You can claim an exemption of up to \$1,000 in respect of your Canadian investment income — interest from Canadian sources (except interest from a person not dealing with you at arm's length or interest from a partnership of which you are a

member), taxable dividends (the grossed-up amount) from Canadian corporations, and taxable capital gains realized on disposal of Canadian securities.

In calculating your investment income for purposes of the exemption, however, don't forget that you must deduct any interest expense incurred on funds borrowed to earn Canadian dividends or interest income.

Improved dividend tax credit

Beginning in 1978, the tax treatment of dividend income has been changed significantly. Now, you must include in income $1\frac{1}{2}$ times the amount of the dividends you actually receive ($1\frac{1}{3}$ in 1977). On the other hand, the dividend tax credit has been sharply increased, so that you can now deduct from your federal tax a credit equal to 25 per cent of the grossed-up dividend (only 18.75 per cent in 1977).

Don't overlook the fact that this also reduces the base on which provincial income tax is calculated, so that the full effect of the dividend tax credit is much greater than it first appears.

The attractiveness of the tax treatment of dividends can be illustrated by the following comparative example (assuming a taxpayer with a 39 per cent marginal federal tax rate, resident in Ontario):

	Dividends	Interest
Amount received	\$1,000	\$1,000
Gross-up (dividends only)	500	—
Taxable amount	\$1,500	\$1,000
Federal tax	\$ 585	\$ 390
Dividend tax credit	375	—
	210	390
Provincial tax	92	172
Total tax payable	\$ 302	\$ 562
Net after tax	\$ 698	\$ 438

In these circumstances, you would have to earn a substantially higher yield on an interest-bearing investment to realize the same after-tax yield available on a good dividend-paying Canadian stock.

CAPITAL GAINS AND LOSSES

Triggering gains and losses

You may have heard it suggested that it is good tax planning to sell securities (or other capital property) before the end of December to create capital losses — possibly to offset capital gains realized earlier in the year. This may be a wise course of action if the property is a "loser" and the sale is based on a sound investment decision, but it makes little sense to dispose of a promising investment solely to create a loss for tax purposes. The same thinking should apply to sales intended to trigger capital gains to use up accumulated capital losses: don't do it unless there are good investment reasons for selling, particularly since capital losses can be carried forward indefinitely.

If you decide to sell, remember that, under the "superficial loss" rule, a capital loss is created as nil for tax purposes if you (or your spouse or a corporation you control) acquire the same or identical property during the period 30 days before and 30 days after the date of disposition. No loss will be recognized in these circumstances until the newly-acquired identical property is later disposed of.

Deduction of capital losses

If your capital losses exceed your capital gains realized in the year, the excess may be offset against other income. For federal tax purposes, up to \$2,000 of the allowable half of excess losses may be applied against an individual's income from other

sources. Losses not used in this way may be carried back one year and forward indefinitely, first to apply against taxable capital gains, if any, of those years, and then up to \$2,000 per year may be offset against other income until the losses are used up.

Allowable business investment losses

If you have realized a loss recently on the disposal of shares or debt of a Canadian-controlled private corporation, or if you anticipate selling such securities at a loss in the near future, you may be interested in another new rule, effective starting in 1978. Such "business investment losses" are treated initially as ordinary capital losses; that is, only one-half of the loss is deductible for tax purposes. However, to the extent that the allowable portion of a business investment loss cannot be offset against taxable capital gains, it may now be treated in the same way as a business loss and applied against other income without the \$2,000 limit.

A point to note is that the new rule doesn't apply if you sold the security other than at arm's length; for example, to a close relative. On the other hand, if the corporation has gone into bankruptcy during the year, you may claim a loss on the security, even though you haven't disposed of it and possibly expect to recover some portion of your cost in the future. (If you receive some proceeds later, you will have a capital gain to report at that time.)

INCOME SPLITTING

If you are in a high income tax bracket, you may wish to consider diverting part of your income to other members of your family whose income is subject to lower tax rates. Outright gifts to your spouse or to your children under 18 years of age will usually be ineffective because any income from the transferred property will be attributed back to you and taxed as part of your income. There are ways, however, to split income effectively between you and members of your family.

Loans

A genuine cash loan to your spouse

may be used to generate income subject to lower tax rates in your spouse's hands. The loan need not be interest-bearing, but should be evidenced in writing and should be repayable within a reasonable time. A non-interest bearing demand note is generally considered to satisfy these requirements.

The use of loans to divert income need not be limited to your spouse. In many cases, it would be beneficial to also make loans to your children (even those under 18 years of age) for this purpose. (You probably should obtain legal advice, however, as to the rights of minors in your province to enter into binding contracts.) No income will be attributed back to you for tax purposes if a bona fide loan arrangement exists, but care should be taken to ensure that the loan is properly documented.

RRSP for spouse

Your contributions to a registered retirement savings plan in your spouse's name can eventually result in withdrawals from the plan being taxed in his or her hands (and not attributed back to you). There are rules, however, to discourage the immediate collapse of a spousal RRSP. If your spouse withdraws funds from the plan, the amount will be added back to your income to the extent of your contributions in that year or those you claimed as deductions for the two immediately preceding years. This means that if you contribute to your spouse's plan in early 1979 (for 1978), the funds should be left in the plan at least until 1981.

Gifts

Although, as noted above, gifts you make to your spouse or to children under 18 years of age will generally result in the income being attributed back to you for tax purposes, a gifting program may still be advantageous in some cases.

In those provinces that still levy succession duties (Ontario and Quebec) gifts made more than a specified number of years prior to the date of death will be excluded from the value of the donor's estate for succession duty purposes.

For provincial gift tax purposes, in

those same provinces, special exemptions (ranging from a full exemption to specified amounts) apply to gifts made between spouses and to children, and in some cases other exemptions are available for gifts of particular kinds of property between members of a family (e.g. a once-in-a-lifetime gift of farm property or shares in a family business).

Except in the case of gifts to a spouse, gifts of capital property (such as shares or real estate) are generally considered to have been made at fair market value, with immediate capital gains implications. Where such property has future growth potential, however, gifts by you to your children may be advantageous because capital gains accruing after the transfer and realized on subsequent sale of the property by the donee will not be attributed back to you. (Capital gains and losses realized by your spouse will be attributed back to you, if you transferred the property to him or her after 1971.)

The income attribution rules mentioned above do not apply in the case of gifts to children over 18 years of age, or in respect of gifts made earlier once the child reaches age 18. Such a transfer may enable the child to earn investment income, to take advantage of the investment income deduction and personal exemptions and, in the case of students, to permit a deduction for tuition fees which might not otherwise be available.

LOW-INTEREST LOANS

Starting January 1, 1979, employees and shareholders will be taxed on benefits they derive by being charged interest at less than a prescribed rate (at present 8 per cent) on loans they receive from their employer or from the corporation of which they are shareholders.

The new rules apply both to loans in existence at the start of 1979 and to loans made after that time, and will require the interest benefits to be included in the borrower's income to the extent that the annual value exceeds \$500. If you borrow \$30,000 as an interest-free loan and the amount remains outstanding throughout the year, the taxable benefit to be added to your

income will be 8 per cent of \$30,000, less \$500, or \$1,900.

Loans to related persons can also be caught — a loan to a person related to an employee, or a loan to a person related to a shareholder of the lender corporation. The rules even extend to loans to shareholders (or related persons) by another related corporation or by a partnership of which either corporation is a member.

Whether and to what extent the benefit will be taxed will depend in part on the purpose for which the loan was made. Certain housing loans are exempt (up to \$50,000), as are loans to enable an employee to purchase shares of the employer corporation or of a related corporation. Naturally, in addition to the exclusion of the first \$500 of annual benefits, a deduction is allowed for any interest paid on the loan.

If you have an outstanding shareholder's or employee's loan at present, you should look into the tax implications and, if necessary, take steps before the start of 1979 to minimize the future tax impact.

DEFERRED INCOME PLANS

The main purpose of the various plans listed in this section is to shelter income from immediate taxation. Unlike the tax planning ideas discussed later under the heading "Tax Shelters", the deferred income plans outlined here not only permit an income deduction for all or part of the amounts you invest in each plan, but also provide for the tax-free accumulation of income while the funds remain in the plan.

Registered pension plans

Contributions by employees to registered pension or superannuation plans are generally restricted by the specific terms of the particular plan. Subject to this you may, as an employee, deduct for tax purposes up to \$3,500 contributed by payroll deduction in the year in respect of current services. In addition, if the plan permits, you may contribute and deduct a further amount of up to \$3,500 in respect of services for past years when you were not a contributor to the plan. Note that past service pension contributions must be

made before the end of December of the year for which they are to be claimed.

Any payments you receive from a pension plan, whether as a lump sum withdrawal or as regular monthly payments after retirement, are required to be included in income, but in some circumstances may be offset by a "rollover" contribution to a registered retirement savings plan (or to an income averaging annuity) if made in the year or within 60 days after the end of the year. Since pension benefits (including lump sum withdrawals) qualify for the \$1,000 pension income exemption, it will usually be advisable in these circumstances to transfer \$1,000 less than the maximum to the new plan, in order to take advantage of this annual exemption.

Registered retirement savings plans

RRSP's have been available for some time and most taxpayers are familiar with the benefits of investing in these plans.

For 1978, the maximum allowable contribution to an RRSP is the lesser of \$5,500 and 20 per cent of your earned income. In other words, the maximum contribution is only available if your earned income is at least \$27,500. The contribution limit will be further restricted if you are an employee and belong to a registered pension plan; in this case your maximum contribution to an RRSP is limited to the lesser of 20 per cent of earned income and \$3,500, less the amount of your contribution if any to the registered pension plan. (In addition to being non-deductible, contributions to an RRSP in excess of the maximum limits may attract a special penalty tax of 1 per cent per month until withdrawn.)

As an alternative (see discussion under "Income Splitting") you may contribute to an RRSP for your spouse, provided your combined contributions to both RRSP's for the year do not exceed the limits noted above.

In addition to the normal contribution limits, as mentioned earlier, the law permits certain receipts such as pension income and retiring allowances to be rolled over into an RRSP without

limit, provided the contribution is made not later than 60 days after the end of the year. This applies only to amounts transferred to your own RRSP; you cannot roll such amounts into an RRSP for your spouse.

Until recently, a taxpayer nearing retirement was offered two choices for funds held in an RRSP: either convert the balance into a life annuity before his 71st birthday, or withdraw the funds before that time and pay tax on them immediately. These rules were amended in 1978 to offer at least two further alternatives.

Now, after age 60 and before the end of the year in which you reach age 71, you will have the choice of either withdrawing the funds and paying tax on them immediately, or converting your RRSP into one or any combination of:

- an annuity for life (as at present),
- an annuity for a fixed term to age 90, or
- a new plan, called registered retirement income fund (RRIF) out of which payments will be made to you each year to age 90.

The term of years under either of the latter two alternatives may, if you choose, be based instead on the age of your spouse — so that payments out of the fixed term annuity or the RRIF can be spread over the period to the year in which the younger of you will reach age 90.

The tax provisions dealing with the operation of a RRIF are somewhat restrictive (not unlike a self-managed RRSP) and a fairly rigid formula applies to require the withdrawal of funds after retirement in increasing annual amounts, but if the purchase of an annuity is not attractive to you, you now have another choice.

Another important amendment introduced in 1978 will affect the treatment of an RRSP on the death of a taxpayer if death occurs before the maturity of the plan. Prior to this amendment, death benefits (including periodic payments) under an RRSP were taxed in the hands of the estate or the beneficiaries. Now, except where the stated beneficiary is the spouse, the commuted value of the remaining

benefits in the plan at the date of death will be taxed as part of the deceased taxpayer's income for the year in which he or she dies. It may be worthwhile to review the terms of your RRSP contract and to consider who the designated beneficiary should be, in view of this amendment.

Income averaging annuity contracts

The effect of the graduated rates of personal income tax is that a sizable increase in your income in one taxation year will usually attract greater tax than if the same amount of income had been received in equal instalments over a number of years. For example, if your combined federal/provincial marginal tax rate is approximately 36 per cent, realizing a \$50,000 taxable capital gain in 1978 would increase your marginal tax rate to approximately 57 per cent. If instead, the \$50,000 was received equally over a period of 15 years, your marginal tax rate could be limited to roughly 40 per cent resulting in a significant tax saving.

Income levelling of this kind can be achieved in respect of certain types of qualifying income by purchasing an income averaging annuity contract (IAAC). Qualifying income includes, among other things:

- taxable capital gains
- retiring allowances
- compensation for loss of office
- death benefits
- stock option benefits
- income of artists, athletes and entertainers
- amounts received from registered home ownership savings plans.

Briefly, an IAAC works this way: you must include in income for tax purposes the amounts of any qualifying income received; you are then entitled to deduct the cost of your investment in an IAAC (up to the amount of the qualifying income less one year's future annuity payments). In each subsequent year, payments you receive out of the IAAC must be included in income, spreading the tax on the qualifying income over a period of years, according to the terms of the annuity contract. The annuity may be

for a fixed period (not exceeding 15 years) or may be in the form of a life annuity.

To qualify for deduction in 1978, an income averaging annuity must be purchased before March 1, 1979 (the same deadline as for contributions to a registered retirement savings plan).

Registered home ownership savings plans

Although the attractiveness of a registered home ownership savings plan (RHOSP) as a savings vehicle was significantly altered by a series of amendments in 1977, it may still offer some individuals a limited means of tax deferment.

if you are over 18 years of age, you may contribute (and deduct from income) up to \$1,000 each year, until you reach the maximum contribution limit of \$10,000. No tax is payable on interest earned while the funds are held in the plan, and the entire amount can be withdrawn tax-free if you use it at that time to acquire an owner-occupied home.

Unlike RRSP's, contributions to an RHOSP are deductible for the year only if you made them on or before December 31, and no contribution can be made if either you or your spouse had an owner-occupied home during the year and in the immediately preceding year (or owned any other residential real estate).

Don't overlook the fact that you are allowed only one RHOSP. Should you decide to withdraw the funds before you have made your full \$10,000 of contributions, you cannot reinstate the plan at a later date. Accordingly, if you already have an amount in an RHOSP and are prevented from making a further contribution at this time, you should think about leaving the funds in the plan for the present; you can leave them to accumulate interest tax-free for up to 20 years if you choose.

BORROWING COSTS

Borrowing for deferred income plans

If you do not have sufficient funds available to take advantage of contributions to one or more of the plans described above, you should consider

whether it is advantageous to borrow for this purpose. Interest costs are generally deductible for tax purposes if you borrow the funds:

- to make past service contributions to a registered pension fund
- to make contributions to an RRSP for yourself (but not to an RRSP for your spouse)
- to purchase an income averaging annuity contract.

It should not be overlooked that a contribution to a deferred income plan will itself result in tax savings that you can use to reduce the outstanding loan. For example, if your marginal tax rate is 50 per cent and you borrow \$4,000 to contribute to your RRSP, your net outlay after off-setting the tax refund would be only \$2,000, and the tax refund when received can be applied to reduce your outstanding borrowings.

Loans for other purposes

If you have outstanding debts on which the interest is non-deductible (e.g., a mortgage on your home or a car purchase loan) and at the same time you have funds available to make a contribution to a deferred income plan, you should probably use the available money to reduce your non-deductible borrowings and then borrow for a purpose (such as those listed above) that will result in a deduction for the interest costs.

In much the same way, it may be possible to convert non-deductible interest into deductible interest in respect of investments. If, for example, you have an outstanding mortgage of \$50,000 on your home and you hold \$20,000 of Canada Savings Bond, you should consider cashing the bonds, reducing your mortgage and then borrowing the necessary funds (interest deductible) if you wish to reinvest in some form of income-producing securities.

Interest on loans incurred for the purpose of investing in income-producing securities will as a general rule be deductible for income tax purposes. In the case of money borrowed to purchase shares of Canadian corporations, you can offset the interest cost against your dividend income, but

this will not affect your right to claim a full dividend tax credit in computing your tax payable. On the other hand, it should be remembered that interest on money borrowed for the purpose of earning interest or Canadian dividend income will reduce your qualifying investment income for purposes of the \$1,000 investment income exemption.

TAX SHELTERS

The term "tax shelter" is used to describe any tax plan designed to provide you with a deduction from income in the current year without an immediate corresponding cash outlay. Although opportunities to invest in tax shelters have been severely restricted in recent years by changes in the tax legislation, a number of tax shelters are still available. These will be most advantageous to taxpayers in the higher tax brackets.

One word of caution: a tax shelter must be viewed as an investment, albeit with tax advantages. You should apply the same criteria to selecting and investing in a tax shelter that you would apply to any other investment decision.

Here are some of the kinds of tax shelters now available in Canada:

Oil and gas properties

Partly as the result of recent changes in the income tax act, there has been an increase in activity and investor interest in the so-called drilling funds or oil and gas funds. Basically, these are vehicles designed to facilitate investment in the oil and gas industry, and offer interesting tax deferral possibilities.

Exploration costs incurred after May 26, 1976 are eligible to be written off 100 per cent in the year. Development expenses, on the other hand, are generally limited to a 30 per cent annual deduction. This means that if you invest in a drilling fund, a significant part of your investment can be claimed as a deduction from income in the year.

The most common form of organization for these ventures is a limited partnership, with the general partner being the operator of the project and the other investors (either individuals or corporations) being limited partners. At the end of each year the limited

partners are provided with a statement showing their share of the year's income, and the exploration and development expenses incurred by the partnership during the year. This information forms the basis of the investor's write-off and income reporting for tax purposes.

Films

One of the main attractions of acquiring an interest in a certified Canadian feature film is that the cost may be written off for tax purposes in one year. For example, a taxpayer might purchase an interest in a new Canadian film for \$60,000, putting up to \$20,000 cash and borrowing the remaining \$40,000 from a bank. At a 60 per cent marginal tax rate, the potential tax saving on writing-off the cost for tax purposes in the year would amount to \$36,000. The key is that, to claim the full deduction, the taxpayer must be at risk for the full amount of the investment, i.e. the \$40,000 loan must be repayable whether or not the film makes money. Rental payments received by the investor in subsequent years will be included in income for tax purposes, offset to some extent by interest expense on the original bank loan. At worst, if no income is received, the taxpayer will only be out of pocket the difference between his original investment (\$60,000) and the tax saved (\$36,000). Should the investor sell his interest in the film, the recaptured depreciation would qualify as income eligible for purchase of an income averaging annuity (IAAC).

Some of the earlier tax shelter plans involving films were challenged by the tax authorities, mainly on the basis of the non-recourse nature of the financial arrangements. Revenue Canada's attitude has now been considerably clarified, and renewed interest is being shown in this type of tax shelter.

Hotels and Motels

Hotels and motels may seem to be unlikely vehicles for sheltering income from tax but many are being acquired as investments by groups of taxpayers in the upper tax brackets, even though they may have little knowledge of the

hotel industry. Typically, a partnership of investors will buy a hotel with the down payment financed by a bank loan, and the balance of the purchase price represented by a mortgage. Even though a professional manager may be hired to run the hotel, the partnership will be considered for tax purposes to be carrying on a business rather than holding an investment. Capital cost allowance may be claimed on the various hotels assets and, because of the relatively high write-off rates on some classes of assets, a loss of tax purposes will often result in the early years of operation. Each partner may deduct his share of the loss and the resulting tax savings are often sufficient to repay the initial bank loan in a few years.

Multiple-Unit Residential Buildings

The opportunity to create tax losses by claiming capital cost allowance (CCA) was severely restricted at the end of 1971. Apparently to encourage the construction of residential property, these restrictions were later lifted in respect of multiple-unit residential buildings (MURB).

For a building to qualify for tax treatment as a MURB, it must be certified as such by C.M.H.C. Buildings principally of frame construction will qualify for CCA (on a 10 per cent declining balance basis) if installation of the footings commenced after November 18, 1974 and before 1978. Other buildings will qualify for CCA on a five per cent declining balance basis where installation of the footings commenced after November 8, 1974 and before 1980 (this includes frame buildings where construction commenced after 1977).

The tax rules governing MURB's do not necessarily make rental real estate an attractive investment, because of the high cost of finance and in view of the rent controls operating in some provinces. However, a number of projects are now being promoted to take advantage of incentives provided under the federal government's housing assistance program. Furthermore, some plans have been structured to minimize

the risks to investors resulting from failure to complete the building on schedule, cost overruns, failure to find tenants, etc. To make the arrangement more attractive, some plans also provide for the investors to write-off up to 100 per cent of certain development expenditures incurred in the course of construction.

Under a typical plan you might purchase a one per cent interest in a certified multiple-unit building, making a down payment in cash and assuming part of the liability under a mortgage on the property for the balance. Each year you may deduct for tax purposes capital cost allowance at appropriate rates for your share of the capital cost of the assets. You may also deduct your share of the allowable expenses incurred in the course of construction and a similar proportion of any cash loss from the operation of the project. If the project eventually realizes a cash profit, your share of the profit will, of course, be included in income for tax purposes, after deducting your share of the capital cost allowance.

If you dispose of the investment this may result in a recapture of any capital cost allowance previously claimed, and may give rise to a capital gain if the proceeds of disposition exceed your cost of the property for tax purposes.

Tax deferred shares

Until the end of 1978, the income tax act allowed corporations to distribute dividends out of their "pre-1972" surplus, free of tax in the shareholder's hands. These dividends reduced the shareholder's cost base of the shares so that eventual sale of the investment will result in a greater capital gain (or smaller capital loss) than would otherwise have been the case. For this reason, these special dividends are often referred to as "tax-deferred" rather than "tax-free".

The right to distribute tax deferred dividends will continue after 1978, but only for special classes of "tax-deferred preferred" shares issued before March 31, 1977 by five major public corporations. The terms of these

share issues vary, but each provides for a continuation of the tax-deferred dividends for several years, followed in most instances by tax-deferred conversion to shares paying ordinary taxable dividends.

These investments offer a good yield, with deferral of tax until the shares are redeemed or sold — and tax at that time only on a capital gains basis. They should be considered if you are in one of the higher tax rate brackets and already have sufficient income to use up the \$1,000 investment income exemption. They will also be attractive if you have a substantial capital loss; you can receive tax-free dividends now and offset any unused loss against the capital gain when the shares are later redeemed or sold.

Deferred annuities

Taxpayers, particularly those approaching retirement, may consider investing some of their spare capital in a deferred annuity. A lump sum payment to an insurance company purchases the right to receive an annuity of a fixed annual amount, either for life or for a specified term of years, starting at an agreed future date. Interest on the invested funds accumulates tax-free in the meantime, and only the income portion of each annuity payment will be taxed when received in later years. No deduction is permitted for contributions to such a plan, but if you take the time to shop around for an annuity offering a good rate of return, deferral of tax on the interest while it is accumulating can offer an excellent method of sheltering income.

If you are 65 or over you may treat the income portion of annuity receipts either as interest (eligible for the \$1,000 investment income deduction) or as pension income (eligible for the \$1,000 pension exemption), so that if you have sufficient other investment income you can also take advantage of the \$1,000 pension exemption or vice versa. This choice does not apply, however, to annuity payments out of a pension plan, registered retirement savings plan, deferred profit sharing plan or income-averaging annuity contract.

Analgesia Society

Dr. Marcel Tenenbaum of Montreal is the new president of the Quebec Chapter of the Canadian Analgesia Society. Other members of the 1978-79 executive committee are: Dr. Philip Gampel, first vice-president; Dr. Irwin Margolese, second vice president; and Dr. Jacques Monette, secretary/treasurer. Dr. Luc Lavallée of Longueuil is past president and will now serve as an advisor.

Quebec orthodontists

Members of the new executive of the Association of Orthodontists of the Province of Quebec are: Dr. David J. Flam, Montreal, president; Dr. Jean-Marc Fortin, Laval, president-elect; Dr. Roger Dufresne, Montreal, past president; Dr. Stephen Miller, Pointe-Claire, first vice-president; Dr. René Bourcier, Montreal, second vice-president; Dr. Antoine Beamier, St. Lambert, secretary; and, Dr. Raymond Asselin, St. Jean, treasurer.

Deaths

Barrett, George W., 70. Ottawa, Ontario, University of Toronto, 1931. 5-10-78.

Brooke, Walter F., 61. Nanaimo, British Columbia. University of Toronto, 1944. 26-10-78.

Carignan, Gaston, 36. Cap de la Madeleine, Quebec. University of Montreal, 1968. 23-10-78.

Jones, Bruce R., 69. Agincourt, Ontario. University of Toronto, 1932. 10-78.

Luborsky, Murray, 55. Windsor, Ontario. University of Toronto, 1952. 10-78.

Richard, Charles, 76. La Pocatière, Quebec. University of Montreal, 1926. 6-10-78.

Sanderson, Robert M., 58. Windsor, Ontario. University of Toronto, 1950. 10-10-78.

Stewart, Duncan R., 69. Edmonton, Alberta. University of Alberta, 1935. 1-11-78.

PROVISIONAL BRIDGE FABRICATED FROM POLYCARBONATE CROWNS

Satish C. Mullick, BDS, MSD, DMD
Sami I. Abdullah Samani, BDS, DDS, MS
Newark, New Jersey

This article describes a technique utilizing preformed polycarbonate crowns and autopolymerizing acrylic resin to fabricate a three unit provisional restoration at the chairside in one sitting. The restoration fulfills the biological, esthetic and functional requirements of a provisional bridge.

In fixed prosthodontics, the importance of properly made transitional coverage cannot be over-emphasized. Unfortunately, even today, compromises are made with such restorations; ranging from poor form and fit to total absence. This may be attributed, in part, to techniques that are too complex and/or time-consuming to fabricate satisfactory provisional restorations.

Many techniques have been utilized for the fabrication of single or multiple unit temporary coverage.¹⁻³ The use of polycarbonate crowns for the restoration of single primary anterior teeth has been described,⁴ and, according to the author, the results have been very satisfying over a period of many years. Steuart et al⁵ and Myers⁶ have reported slightly different techniques for similar crowns. Polycarbonate crowns can also be used to fabricate multi-unit provisional restorations.

The technique described here is very simple and requires little time from beginning to completion. It has certain advantages over the other techniques that require the making of an alginate or a wax impression, a model and a template, or other laboratory procedures before a provisional restoration can be made. When a patient has lost his existing bridge and needs temporary protection of the prepared teeth immediately, this technique can be utilized. Also, when a dentist has already prepared the teeth and has not taken the necessary steps for a provisional restoration before the inception of cutting, this method provides a helpful solution.

Method

In this case, a three unit fixed prosthesis was to be made to replace an upper right lateral incisor. Of the two abutments, the canine had been endodontically treated and was prepared to receive a cast post and core. The central incisor

was vital and was prepared for a porcelain fused to metal crown (Fig 1).

Preformed polycarbonate* crowns were selected for the two abutments and the pontic. More consideration was given in selecting the two crowns with correct mesio-distal dimension than the length and the gingival fit. The latter as well as the internal surface of the crowns were adjusted during the fabrication of the provisional restoration. Perforations were made with a round bur on the mesial surface of the canine, both proximal surfaces of the lateral incisor and the distal surface of the central incisor to facilitate bonding between the units.

The crown forms were seated on the central incisor and the canine (Fig 2). Wax was adapted to the palatal aspect of these and the adjacent teeth to hold these crowns in correct position. The crown form for the pontic was properly positioned in alignment with the other teeth. The wax was readapted to the teeth, avoiding the interproximal spaces to assure a good index (Fig 3), and the entire assembly removed from the mouth in one piece. Other materials such as impression plaster or impression compound can be used for making the index.

Two coats of copal varnish were applied to the central incisor to protect the pulp. An aluminum post was fitted in the canal of the canine. The prepared and adjacent teeth and the surrounding soft tissues, including the pontic area, were lubricated with petroleum jelly (Fig 4).

The inside of the crowns were wetted with a few drops of monomer and filled with a mix of autopolymerizing resin.† After the initial glaze had disappeared from the resin mix, the assembly was seated back in its place in the mouth. The excess resin around the margins was removed with an explorer dipped in monomer.

After the initial polymerization had taken place (approximately three to four minutes) the assembly was removed from the mouth, the bridge was separated from the wax and was placed in warm water for final curing.

*Unitek Corp., Monrovia, California.

†Jet-Acrylic, Lang Dental Mfg. Co., Chicago, Illinois.

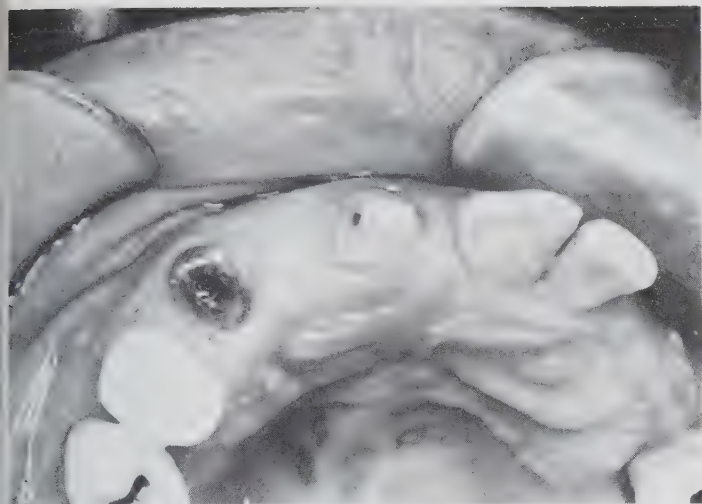


Fig 1 Upper teeth, showing the missing right lateral incisor. The defective restorations on the right central incisor and the right canine have been removed.



Fig 2 Crowns seated on the central incisor and canine.

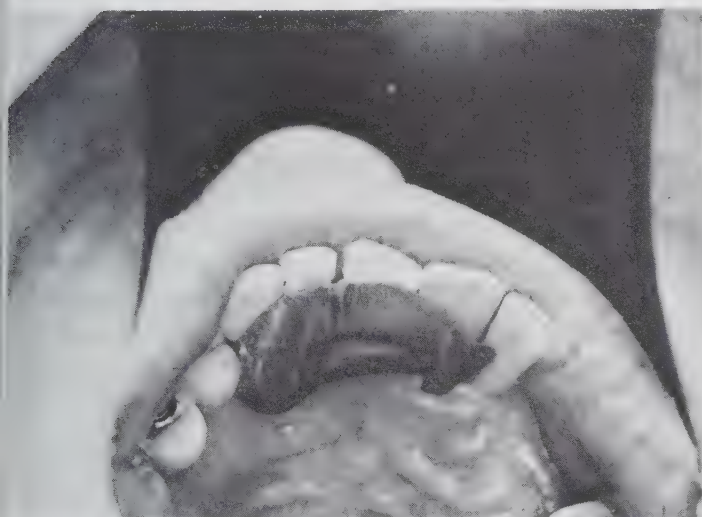


Fig 3 Wax index and the three crown forms in place.



Fig 4 Aluminum post placed into the canal of the canine.

After the acrylic had hardened, the margins were trimmed and the embrasures were opened up. The tissue side of the pontic was reshaped to give it a modified ridge-lap relationship with the ridge. The bridge was placed on the teeth and its proximal and occlusal contacts were checked and corrected.

Very little time was required to impart the final finish and polish to the restoration before it was ready to be cemented in the mouth (Fig 5).

A modification of this technique can be made to achieve the same results. First, individual provisional crowns are made for the abutments and then the pontic is added to complete the multi-unit restoration. In this way, no index is required. This modification is quite useful for dental stu-

Fig 5 The provisional bridge cemented on the teeth.



Continued on page 27

THE CLINICAL RESEARCH MISSION OF DENTAL COLLEGES

Jerry F. Taintor, DDS, MS
Robert C. Biesterfeld, DDS
Lincoln, Nebraska

The dental college, as part of a university, has as its missions, teaching, service and research. This paper specifically addresses clinical dental research as an important yet overlooked facet of the research mission. The purposes and methods of obtaining meaningful clinical data by use of computer technology are suggested.

A university, according to Webster's New Collegiate Dictionary, is "an institution of higher learning, providing facilities for teaching and research and authorized to grant academic degrees". Thus, by definition, a university has a role, both for teaching and for research.

Lord Bryce stated that "a university should be concerned with its times, but not give in to them". For general accreditation of a university, evidence of research activity is a prerequisite. More aptly, no institution is truly a university without extensive research and creative scholarship on the part of the faculty. The missions of a land-grant university include the interdependent components of teaching, service and research. The dental college, being an integral part of a university, has the same missions and academic responsibilities as does the university as a whole. This paper is addressed to the research mission of the dental colleges, the interaction of the research mission with the teaching and service missions, and offers suggestions on how dental colleges may meet the clinical or applied research obligations via close scrutiny of different treatment modalities.

Dental colleges perceive teaching to be of varying importance. While teaching is an important mission, it cannot be at the expense of the service and research missions of a university. The competency and currency of undergraduate and graduate teaching are demonstrated by the efforts put forth by the faculty in service to the patient, the profession and the community. It is through the interaction of individual faculty members with patients and professional peers that clinical problems, as they relate to the everyday clinical practice of dentistry, can be examined. It is the nature of these encounters that more questions are generated than are answered. The clinical dentist, as an intellectual, strives to answer these questions with little or no controls, no defined intent of success, and with a definite bias. His questions are

legitimate; the answers often are not. Hence, the necessity of clinical research is self-evident. It is the obligation of dental colleges to determine the answers to clinical questions, so that information presented is based on treatment obtained by research, rather than subjective opinions and biased observation. Teaching should build on the past and move toward the future, rectifying yesterday's mistakes and improving present techniques.

Research is, in part, an attitude created by faculty members who are willing to admit ignorance when they lack information on a subject, and who are intellectually probing enough to seek answers to clinical problems. This intellectual probing for answers is infectious, and lifelong students of dentistry must nurture this attitude within themselves if the profession is to advance. This then, is the goal of research. It must be integral to the generation of new knowledge; and inter-related to the service and teaching missions of the dental college.

Basic science research, an important foundation upon which the clinical sciences are and must be built, is often thought of first when research is mentioned. Unfortunately, the applied or clinical research aspects of ultimate value to the practising dentist are sadly neglected. Seldom do we examine the long-term product of the extensive patient care rendered by dental institutions. For all practical purposes, except for one ADA survey,¹ we have little valid scientific evidence pertaining to the long-term prognosis of routine procedures, e.g. crowns, fixed bridges, amalgam restorations and endodontic treatment. The "secret" of clinical research, and it should be self-evident, is in keeping good records and making simple conclusions. Prior to the advent of the computer, this task would have been enormous. What excuse can we use today?

The purposes of the research mission

There are numerous purposes served by the research mission. Some of these include:

1. Generating new knowledge.
2. Contributing to existing knowledge.
3. Fulfilling a responsibility to the intellectual community, expanding knowledge for the betterment of society and improving educational methods.

4. Partially fulfilling the educational commitment of the dental colleges as determined by the overall mission of the parent university.
5. Providing the essential foundation of a quality instructional program at the graduate level, and contributing significantly to the breadth and quality of the university's undergraduate program.
6. Helping the dental college and its faculty reach their full potential of excellence.
7. Motivating faculty members to publish, and therefore be recognized by their peers.

It should again be pointed out, the goals within the research mission are for the benefit of university, college, faculty, the profession, graduate and undergraduate students, and society in general. All of these are clearly interdependent.

The research approach

The important role of basic science research has often been emphasized; however, as previously stated, the topic of applied clinical research has only been hinted at in the past. Administrators, in addition to their other duties, are concerned with record-keeping to determine student grades and performance levels. While these functions are certainly important, the computer potential of record keeping in applied clinical research is, for the most part, ignored. Many dental colleges use computerized record systems, but the computer is only as sophisticated in data collection and correlation as its programming. It is therefore necessary to develop a clinical data form that will allow retrieval of the information required to answer clinical questions.

It is amazing, when one considers the millions of patients treated by colleges of dentistry, that we cannot answer with any *certainly* many questions, including the following:

1. Periapical radiographic lesions of 10 mm in diameter, or larger, have been implicated as having a predilection to being cystic. If we treat these with non-surgical endodontics and follow these cases for four years or longer:
 - a) Do these resolve with the same frequency as smaller lesions?
 - b) Does age or sex of the patient influence the success rate?
 - c) Do different levels of endodontic filling materials influence the success rate?
 - d) Does the filling material itself, or the method of biomechanical preparation, influence the success rate?
 - e) How does the history of the tooth relate to the success rate? (i.e. duration of lesions, symptomology, etc.)
2. A MOD inlay:
 - a) How often, based upon recall, are teeth treated with a MOD inlay involved with the cracked tooth syndrome?
 - b) What are the marginal areas that are most prone to recurrent caries, and how can the preparation design best be modified to eliminate this problem?
 - c) What is the long-term prognosis of the restoration?
 - d) What influence does this restoration have on the maintained vitality of the tooth?

These are only two of a multitude of treatment modalities that must be examined before we can proceed from the empirical and subjective to the experimentally demonstrable and objective rationale of treatment.

Conclusion

Dental colleges have the same research mission as their parent universities. The importance of this mission to the university, the college, the profession, the faculty, the students and, ultimately, the patients they treat, must be realized and the obligation met.

Basic science research has been the mainstay of dental college research efforts. The often overlooked clinical or applied research is a must to advance and evaluate rational treatment modalities. With the advent of the computer as a record-keeping device, the possibility of correlating treatment modalities and successful treatments over long periods of time can be a reality.

The authors wish to express their thanks to Dr. A. Birk Adams, Associate Professor of Oral Biology, and to Mrs. Margaret P. Schmatz, Learning Resources, for their helpful criticism and advice.

Dr. Taintor is assistant professor of endodontics, and Dr. Biesterfeld is a second year endodontic graduate student, at the University of Nebraska, College of Dentistry, Lincoln, Nebraska.

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Provisional bridge . . .

Continued from page 25

dents learning to perform clinical fixed prosthodontics, where they prepare and temporize one abutment tooth at a time, in one visit.

Dr. Samani is professor, and Dr. Mullick is assistant professor, Department of Fixed Prosthodontics, College of Medicine and Dentistry of New Jersey, 100 Bergen St., Newark, New Jersey 07103, U.S.A.

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LET'S KEEP DENTISTRY FOR CHILDREN IN PRIVATE PRACTICE

Edward J. Hyde, DDS, MSD
Vancouver, B.C.

Eric E. Spohn, DDS
Lexington, Kentucky

This article discusses various aspects of dental treatment in a public health dental clinic environment. An alternate proposal is outlined whereby an expanded duty hygienist would provide specific treatment in a private dental office.

There is no evidence to show that dentists in private practice have not been providing, efficiently and economically, the best possible dental care for the patient. However, we are seeing more and more signs of government involvement in the provision of dental services. As a result, dentistry as practised in North America faces a real challenge.

Government involvement in the provision of dental services is in response to a social trend now evolving in the minds of many people, namely the concept that comprehensive health care (with no limitations) is the right of all citizens and not a privilege. If dentists in private practice fail to provide more care at less cost, there is a definite possibility that the government will look for an alternative way to provide dental treatment. This usually results in the establishment of public health clinics where lesser-trained personnel provide dental care for specified age groups.

What is happening elsewhere

Many countries in the English-speaking world and elsewhere have already begun to provide dental treatment services at government expense. These countries have passed legislation allowing ancillary personnel to perform extensive treatment procedures, including the administration of local anaesthetic and the cutting of tooth tissue. This legislation in some cases actually bypassed existing dentistry acts and set up a separate program for the new type of auxiliary.

The New Zealand dental nurse, with two years of training, has been providing extensive treatment for the children of that country for the past 55 years.¹ In Australia the same amount of training is being given to the school dental therapist, who has been operating since 1970.² In England the dental auxiliary, patterned after the New Zealand dental nurse, has been providing operative treatment for school children during the past 16 years.³ More recently, in Can-

ada, the provinces of Saskatchewan and Manitoba, through their government programs, have been training and employing dental auxiliaries to perform even more extensive procedures than those permitted in other countries.⁴

In all these countries, dental treatment by auxiliaries is performed in clinics under the direct or indirect supervision of salaried dentists employed by government. It should be pointed out that when the standard of work done on patients by these auxiliaries was evaluated, it was rated high.⁵⁻⁹ However, it seems that long-term benefits are not always attained at public health dental clinics.

The "clinic habit"

What can happen to long-term benefits when no-cost dental treatment is provided at a public health dental clinic? It was concluded from a study conducted in Brookline, Massachusetts that use of a public health dental clinic by young children did not result in improved dental health in adolescence.¹⁰ Teenagers who were accustomed to receiving dental care at a clinic are unlikely to turn to a private practitioner when they are no longer eligible for clinic treatment. Similar conclusions might be made about the effects of clinic dentistry elsewhere.

In Vancouver, it was found that the teeth of children in grade 7 (who had all restorative treatment completed at a school clinic when they were in grade 1) were in a worse state of repair than the teeth of those who did not avail themselves of the service.¹¹ In Finland, an evaluation was made of the benefits of no-cost dental care at public school clinics by observing the dental caries incidence of army recruits: the caries rate was found to increase in direct proportion to the number of years that the recruits received "free" dental care; it was concluded that constant no-cost repair of the teeth did not give long-term relief from the caries problem.¹² Lack of long-term dental health benefits has also been observed in New Zealand, where residents had restorative treatment completed without cost at clinics while attending school.¹³

Patients provided with dental services at a public health

clinic seem to acquire a so-called "clinic habit" which tends to decrease personal responsibility for dental health. When the clinic services are no longer available to them, they are not motivated to seek regular dental care from a private practitioner.

A proposal

In the event that a dental plan is considered by the government, it is expected that the dental profession will be consulted. It is believed that it would be in the interests of dental health to present a plan which would keep dentistry in private practice. Thus, the following proposal would help formulate such a plan.

The dental auxiliary employed in this proposal would be referred to as a dental health maintenance person. This person will be a qualified dental hygienist who has successfully completed an acceptable training program in expanded functions, including operative treatment procedures on children,* and would work under the direct supervision of a dentist in private practice. The patients cared for by this new auxiliary would be those normally seen on a routine recall basis and who, to a large extent, need preventive treatment and may also require minimal restorative procedures. In addition to the preventive and treatment services usually assigned to the dental hygienist, the dental health maintenance person would perform limited restorative procedures required by selected patients on recall appointments.

In this proposal, the dentist would complete all diagnostic and treatment procedures for each new patient. He would then decide whether the patient should be placed on his recall list or whether the recall appointment could be handled by the dental health maintenance person. Those patients who would receive treatment from the dental auxiliary would be children whose dental condition had passed the acute-care and rehabilitation stages and had reached a maintenance stage. The dentist would select these patients and decide on the period of time between recall appointments. At each recall appointment, the dental health maintenance person would perform the necessary preventive and operative work upon the recommendation of the dentist. The restorative procedures would be confined to the treatment of new carious lesions, recurrent caries and replacement of unserviceable restorations. The procedures would include the administration of local anaesthetic, cavity preparation and placement of cements, amalgams, stainless steel crowns and resin restorations. In all cases the quality of care would be the responsibility of the dentist.

Possible results of the proposal

The employment of dental health maintenance persons could help solve three of the problems facing dentistry today: (1) Too much of the dentist's time is spent on treatment procedures which could be performed just as well by dental auxiliaries. (2) Too many highly trained dental personnel are being lost each year. The number of dental

hygienists leaving practice is far greater than that of personnel in other health occupations; it was shown that after a comprehensive training program of two, three or four years, 86 per cent discontinued full-time practice after only five years.¹⁴ (3) Dentists in private practice would probably be unable to handle the increased demand for services which would result from a government-imposed treatment program.

Benefits

With the dental health maintenance person working in private practice, the following results might be expected. Firstly, some of the dentist's time would be freed for the performance of more sophisticated types of treatment. Secondly, the specially trained dental hygienists, in assuming more responsibility and being given more continuity in the preventive and maintenance care of patients, would attain greater job satisfaction. With their potential more fully realized, it is expected that fewer would drop out of their chosen career. Finally, dentists in private practice would be better able to meet the increased patient load which would be presented by a government dental plan for children.

The relationship between the dentist and the dental hygienist in this new role would remain unchanged, and the procedures delegated would all be within the capabilities of the hygienist. The dentist would perform all diagnoses and maintain responsibility for the quality of health care delivered to his patients.

There should be no reason for concern that the dental health of the public would worsen as a result of employing dental health maintenance persons. A high standard of dentistry performed in private practice can be maintained when dental care is kept within private practice.

Conclusion

There is a growing need for a more effective dental health care delivery system.¹⁵⁻¹⁹ The changes which are now being initiated to meet the need are mostly concerned with expanding the duties of dental auxiliaries. The most controversial area of this expansion, namely the cutting of tooth tissue, is already being done in the public health clinics of many countries and seems to be gaining support in many areas of Canada. Although it has been shown that the quality of work performed by these auxiliaries is entirely acceptable, it has also been observed that when patients receive treatment at public health clinics, there does not seem to be any long-term benefit to their dental health. Therefore, it is proposed that the effectiveness of auxiliaries whose expanded duties include tooth-cutting procedures be evaluated in a private-practice setting.

Dr. Hyde is assistant professor, Faculty of Dentistry, University of British Columbia, Vancouver, B.C.

Dr. Spohn is assistant dean, Dental Allied Health Education, University of Kentucky, Lexington, Kentucky, U.S.A.

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*Such a program is offered at the University of Kentucky.

Dentistry for children

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LA RÉSORPTION OSSEUSE ET LA PROTHÈSE COMPLÈTE

Rénald Pérusse, DMD

Assistant professeur, section diagnostic

Université Laval

Québec

Ce travail du Dr. Pérusse constitue une vue d'ensemble sur le problème de la résorption osseuse, aux points de vue pathogénèse et pathophysiologie, ainsi qu'un aperçu des méthodes employées en chirurgie pré-prothétique. La plupart des contenus pourraient être longuement discutés et élaborés, mais tel n'était pas l'objectif de l'auteur.

I. Introduction

On estime, tout en ne disposant pas de statistiques précises à ce sujet, que la population adulte au Québec, dans une proportion d'une personne sur trois, a perdu toutes ses dents, le plus souvent aux deux maxillaires. De ce groupe, 42% des patients ont gardé leurs premières prothèses pendant plus de 12 ans et 61% pendant plus de 8 ans; de même, la plupart de ces patients portent leurs prothèses 24 heures par jour.

Il n'est donc pas exagérer de dire que l'édentation totale, handicap fortement rencontré dans nos régions est un des plus sérieux problèmes auquel puisse être confronté le dentiste.³

II. Etiologie de la résorption osseuse

A) Pathologies osseuses:

- 1) ostéomalacie: calcification défectueuse de la matrice organique du à un défaut du métabolisme du calcium (insuffisance de vit. D, troubles rénaux).
- 2) ostéoporose: formation insuffisante de la matrice; défaut fréquemment rencontré chez les édentés.
- 3) ostéite fibreuse: trouble conséquent à l'hyperparathyroïdisme, se manifestant par le remplacement de l'os par du tissu fibreux.

B) Atrophie par non-fonction:

Causes: 1) l'os ne peut être aussi bien stimulé par une pièce de prothèse qu'il ne l'était auparavant par les dents naturelles (manque de stimulation interne).

- 2) diminution des forces de mastication.

C) Stress:

Avec l'âge, on note une diminution progressive de la

résistance au stress. Or, le stress peut être impliqué dans la résorption osseuse de deux façons:

- 1) l'ACTH, hormone sécrétée par l'hypophyse antérieure, catabolise (dégrade) les protéines, ce qui interfère avec la formation de la matrice osseuse.

- 2) le stress réduit la production des hormones sexuelles qui ont un effet anabolisant.²

D) Facteurs systémiques:

- 1) hypophosphatémie: — une diète déficiente en phosphore est un soi très rare.

— certains troubles d'absorption peuvent être observés chez des patients souffrant d'ulcères duodénaux traités avec des antiacides contenant un gel d'hydroxyde d'aluminium qui se lie au phosphore et le rend insoluble.

— peut être occasionnée par une diminution de la réabsorption tubulaire du phosphore.⁹

- 2) hyperthyroïdisme: l'augmentation du métabolisme basal amène une balance azotée négative, ce qui équivaut à une déficience en protéine (ostéoporose).

- 3) hypoinsulinisme: le diabète est responsable d'une pauvre guérison, d'une tolérance diminuée des tissus et d'une résorption osseuse rapide.⁹

- 4) glucocorticoïdes: ces hormones sont anti-anaboliques. Une trop grande quantité (maladie de Cushing, thérapie aux stéroïdes) inhibe la formation osseuse et cause une sévère ostéoporose.

- 5) déficience en hormone sexuelle: chez les gens âgés, spécialement chez les femmes après la ménopause, ces hormones de type anabolique sont diminuées avec le résultat que la résorption osseuse se fait plus vite que la formation (ostéoporose sénile).

- 6) hyperparathyroïdisme: le rôle de cette hormone (parathormone) est de mobiliser le calcium dans le courant sanguin à partir des réserves osseuses; son taux de production est directement relié à la concentration en calcium sanguin.

Causes de l'augmentation de PTH:

- a) hyperparathyroïdisme primaire: hyperplasie, tumeur des glandes parathyroïdes.

- b) hyperparathyroïdisme secondaire:

1. diète insuffisante en calcium
2. absorption pauvre du calcium:

- troubles intestinaux (sprue)
- gastrectomie partielle
- trouble du foie: les graisses non absorbées forment des sels de calcium insolubles
- déficience en vit. D

3. excrétion accrue du calcium dans l'urine

4. grossesse et lactation

5. troubles rénaux: diminution de la réabsorption tubulaire.⁹

7) déficience en calcitonine: cette hormone est produite par la thyroïde; son équilibre avec la parathormone est très important pour le contrôle de la calcémie.

deux rôles:

- réduit la concentration sanguine du calcium.
- inhibe la résorption en réduisant le nombre des ostéoclastes.¹²

E) Facteurs nutritionnels:

1) Vitamines:

vit. A: une déficience peut se manifester par un dommage aux tubules rénaux, avec perte du phosphore, dérangement du Ca/P et ostéoporose.

vit. B: un manque entraîne de l'ostéoporose.

vit. C: en quantité insuffisante, elle amène une diminution de l'activité ostéoblastique et de la formation de la matrice.

vit. D: joue un rôle important dans l'absorption du calcium.

2) Minéraux: la diète doit nous fournir des quantités adéquates en calcium et phosphore.

3) Absorption insuffisante de protéines.

F) Rôle du port d'une pièce de prothèse dans la résorption

Suit maintenant une autre classification des facteurs en cause dans la résorption, telle que décrite par le Dr. Atwood.^{2,6}

1) *Facteurs anatomiques*: on y inclut la grosseur, la forme et la densité des crêtes, l'épaisseur et le caractère de la muqueuse recouvrante. On sait par exemple que plus l'os est dense, plus il est lent à résorber, ce qui est le contraire en présence d'ostéoporose.

2) *Facteurs métaboliques*: comprennent les facteurs nutritionnels et hormonaux.

3) *Facteurs fonctionnels*: incluent la fréquence, l'intensité, la durée et la direction des forces appliquées à l'os qui influencent sur l'activité cellulaire, résultant soit en formation ou résorption, dépendant de la résistance individuelle à ces forces.²

4) *Facteurs prosthodontiques*: réfèrent aux techniques et concepts incorporés dans la fabrication des pièces de prothèses.

III. Pathogénèse

— La résorption des crêtes résiduelles est un phénomène lent, chronique, progressif et irréversible, habituellement

plus rapide durant les six premiers mois suivant l'extraction.

— Le taux de résorption varie d'un individu à l'autre, à différents instants chez le même individu et selon la région considérée.⁵

— La réduction de la crête s'effectue au buccal, lingual et sur le sommet de la crête . . .

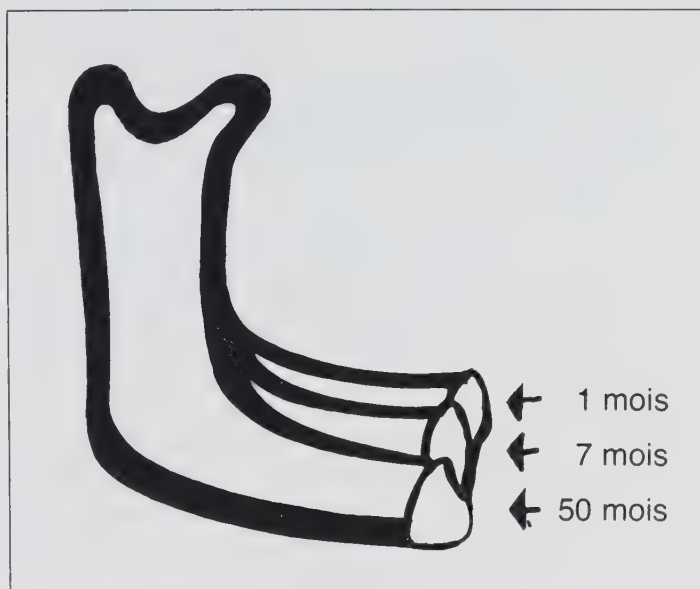
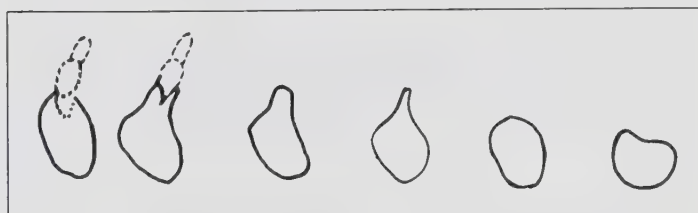


Schéma de la réduction de la crête. A noter la réduction de plus en plus aigue.

. . . nous donnant tour à tour une crête haute arrondie, en forme de couteau, basse arrondie et dépressive.⁵

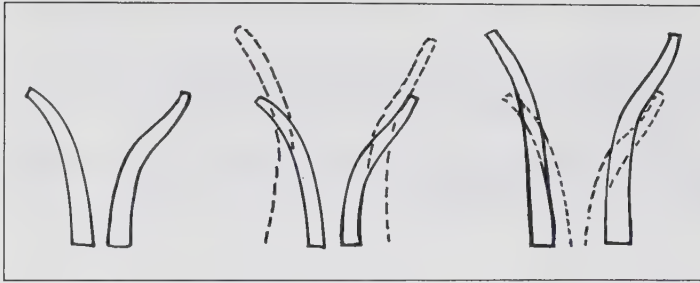


— Très probablement, la résorption des crêtes résiduelles est une entité d'origine multifactorielle. Elle ne dépendrait donc pas d'un facteur en particulier mais nécessiterait la présence simultanée de certains cofacteurs: anatomiques, métaboliques, fonctionnels et prosthétiques.

IV. Physiopathologie

Quoique la quantité de perte osseuse soit supérieure à l'épaisseur de l'os cortical, on a cependant observé chez certains patients en stage de résorption avancée la formation d'un os se rapprochant de l'os cortical, laissant donc supposer l'apposition interne de tissu osseux.

Essentiellement, la résorption osseuse est un processus où résorption externe (périostéale) et apposition interne (endostéale) sont deux phénomènes simultanés qui vont de pair. Il est à noter que ce processus de remodelage est en tout point semblable à celui observé lors de la croissance des os longs; ceci est très bien représenté par le principe du V.⁵



V. Etudes cliniques et céphalométriques

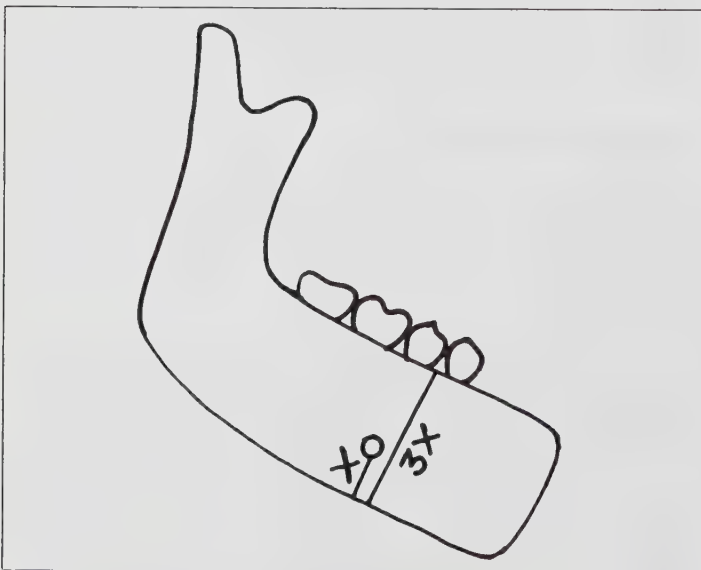
A la suite d'études cliniques et céphalométriques, on a pu observer que:

- 1) le taux de résorption varie selon l'arcade considérée: il est d'environ .1 mm par année pour la partie antérieure du maxillaire supérieur tandis que le taux de résorption de la partie mandibulaire antérieure se situe approximativement autour de .4 mm. On retrouve donc quatre fois plus de résorption à la mandibule qu'au maxillaire supérieur.
- 2) le taux de résorption est légèrement plus élevé chez les hommes; il l'est aussi plus élevé chez les jeunes porteurs, dans les périodes suivant l'extraction, pour ceux qui portent leurs pièces longtemps durant la journée et chez ceux pour qui l'occlusion centrique ne correspond pas à la relation centrique.¹

VI. Utilité des radiographies panoramiques pour déterminer la quantité de résorption osseuse

Au moyen de radiographies panoramiques de mandibule normale (où les dents étaient présentes), on a déterminé que la localisation du trou mentonnier relativement au bord supérieur et inférieur de la mandibule était très constante (Réf. 11).

On s'est rendu compte que la hauteur totale de la mandibule par rapport à l'os situé sous le trou mentonnier était dans un rapport de 2.90, donc approximativement de 3.



Comme cette partie de l'os situé sous le trou mentonnier est très peu affecté par la résorption sauf dans les cas extrêmes, il survient que sa hauteur devient un excellent moyen de prédire la dimension initiale de la mandibule et par conséquent le degré de perte osseuse, tout simplement en multipliant par trois la hauteur sous le trou mentonnier.

Ainsi, à partir de la position du trou mentonnier, il devient donc possible de classer les résorptions de mandibules édentées en trois groupes:

- groupe 1: jusqu'à $\frac{1}{3}$ d'os de perdu
- groupe 2: entre $\frac{1}{3}$ et $\frac{2}{3}$ de perdu
- groupe 3: $\frac{2}{3}$ et plus.⁷

VII. Rôle du calcium et du phosphore

A l'encontre du fait qu'on ait mentionné auparavant que la résorption osseuse nécessitait la présence simultanée de certains cofacteurs, nombreux sont les dentistes qui encore aujourd'hui croient que cette dernière est causée par de la non fonction, par des facteurs mécaniques ou par de l'inflammation seulement.

Cependant, il apparaît de plus en plus que les différences physiologiques entre individus modifient grandement la réponse de l'os aux forces mécaniques.

Pour leur part, les Dr. Wical et Swoope se sont penchés sur les problèmes engendrés par une déficience en calcium et sur le débalancement du rapport Ca/P.¹

Calcium:

rôles:

- transmission de l'influx nerveux
- régulation de l'activité cardiaque
- intervient dans le mécanisme de coagulation
- principal constituant du squelette

Un apport insuffisant, une absorption inadéquate ou une excrétion exagérée de calcium amène une surproduction de la parathormone, hormone qui puise le calcium de l'os pour rétablir une concentration sanguine normale.

Le fait de plus important que l'on puisse mentionner au sujet du calcium est que la source primaire de ce minéral est l'os alvéolaire; suivent dans l'ordre les côtes, vertèbres et extrémités des os longs. La déplétion osseuse de l'os alvéolaire se fait en bonne partie au niveau de sa partie trabéculaire (très peu de calcium est perdu au niveau de l'os cortical).

Phosphore:

rôles:

- minéralisation
- production d'énergie
- régulation du pH

Dans la diète américaine, la concentration en phosphore est de 3 à 4 fois plus élevée que celle en calcium. Or, il a été prouvé expérimentalement qu'un excès de phosphore était responsable d'un hyperparathyroïdisme secondaire qui amenait une déplétion du calcium du pool osseux, principalement des mâchoires.

Taux recommandés:

Ca: 800 mg/jour
P: 1,000 à 1,300 mg/jour
Ca/P: .7 à 1

Pour démontrer l'importance du rôle du calcium et du phosphore sur la résorption osseuse, on a fait pendant 14 jours l'étude du journal alimentaire de 44 sujets divisés en deux groupes, soit ceux présentant moins du $\frac{1}{3}$ de résorption de la mandibule (1er groupe), et ceux présentant plus de $\frac{1}{3}$ de résorption.

Résultats:

Calcium: la quantité moyenne de Ca quotidien pour le premier groupe (moins de $\frac{1}{3}$) était de 933 mg comparativement au taux normal qui est de 800 mg, et au taux de 533 mg pour les sujets de deuxième groupe.

Phosphore: On a calculé pour le 1er groupe une absorption moyenne de 1297 mg de phosphore, qui était cependant estimée à 977 mg pour le deuxième groupe, soit un taux inférieur à la normale.

Ca/P: au-dessus de .7 pour le 1er groupe; au-dessous de .7 pour le deuxième groupe.

A la suite de ces observations, il apparaît donc important de considérer les facteurs alimentaires dans le diagnostic et le traitement des problèmes prothodontiques.^{7,8}

VIII. Traitement

1) Relation patient-dentiste —

pour tout genre de réhabilitation dentaire, la communication entre le dentiste et son patient est très importante: (1) évaluation du patient; (2) éducation du patient.

2) Traitement systémique —

a) correction des facteurs nutritionnels en cause

— minéraux
— vitamines
— protéines

b) correction des facteurs hormonaux:

exemples:

— contrôle régulier de thérapie aux stéroïdes
— thérapie aux oestrogènes après la ménopause
— ablation chirurgicale de tumeur dans le cas d'hyperparathyroïdisme primaire
— correction de l'hypocalcémie dans le cas de l'hyperparathyroïdisme secondaire.

3) Traitement chirurgical —

A) Aplatissement de certaines structures

anatomiques profondes

1. Mandibule: dans les cas de résorption avancée, la crête mylo-hyoïdienne et les apophyses génies font saillie; il faut les enlever car leur présence est très douloureuse.

2. Maxillaire: l'ablation de l'épine nasale et des apophyses ptérygo-maxillaires (tubéroplastie) augmente la surface de contact de la pièce avec les tissus.⁴

B) Augmentation de la stabilité et de la rétention des prothèse

1. extension de crête

2. augmentation de la crête: greffes osseuses

3. implants

1. Extension de crête

Maxillaire supérieur —

a) Vestibuloplastie sous-muqueuse:

indications: crête très résorbée avec vestibule peu profond dont la muqueuse est saine, exempte de cicatrice ou d'hyperplasie.

technique: incision à partir de l'épine nasale qui se continue postérieurement pour disséquer la muqueuse de la sous-muqueuse. Dans un 2e temps, la sous-muqueuse est séparée du périoste. L'extension de la crête est alors obtenue en repositionnant supérieurement le buccinateur.

b) Vestibuloplastie par épithélialisation 2e

indication: vestibule presque inexistant avec présence de tissu cicatriciel et d'épulis fissuratum.

technique: lambeau demi-épaisseur replacé apicalement et suturé au périoste, ce qui amène de ré-épithélialisation et la granulation de cette surface.

problème: perte de la profondeur du vestibule créée chirurgicalement de 50% après 3 ans. C'est pour cette raison que de plus en plus cette technique est complétée par des greffes de muqueuses et de peau pour maintenir les muscles repositionnés dans leur nouvelle position avec dans ce cas une perte de hauteur de seulement environ 20% à 30%.

c) Vestibuloplastie + greffe

technique: (1) lambeau demi-épaisseur suturé apicalement au périoste; (2) greffe libre de tissu mou.

résultat: perte de 20% à 30%.^{4,10}

Mandibule —

a) Vestibuloplastie + épithélialisation 2e

technique: procédure identique à celle décrite antérieurement pour le maxillaire supérieur; "technique de Clark et Kazanjian".

résultat: 80% à 95% de perte.^{4,10}

b) Vestibuloplastie + greffe de muqueuse buccale

indication: vestibule buccal peu profond, attachements musculaires élevés, épulis fissuratum.

technique: identique à celle décrite pour le maxillaire supérieur. La greffe est suturée et recouverte d'un splint en acrylique maintenu en place par des sutures circonférentielles autour de la mandibule.^{4,10}

c) Abaissement total du plancher de la bouche, vestibuloplastie et greffe de peau

technique:

1) obtention d'un morceau de peau exempte de poils.

2) dissection du plancher de la bouche.

3) dissection du sulcus buccal.

4) sutures pour relcaliser le plancher de la bouche.

5) impression du site receveur au moyen de compound pour se faire une plaque destinée à recouvrir la surface découverte.

6) positionnement de la greffe contre la surface interne de la plaque, maintenue en lace grâce à un adhésif, le tout étant immobilisé grâce à des sutures circonférentielles autour de la mandibule.^{4,10}

2. *Augmentation de la crête: greffes osseuses*

indications: dans les cas extrêmes d'atrophie, quand les techniques d'extension de la crête sont jugées inapplicables ou insuffisantes.

technique: technique complexe, nécessitant deux sites opératoires différents. Les sites donneurs les plus fréquemment employés sont les côtes et l'os iliaque. Les morceaux d'os sont déposés dans un tray perforé en vitallium avec sur sa surface interne un filtre destiné à éviter l'infiltration de tissu fibreux entre les morceaux d'os. Comme désavantages, mentionnons la résorption partielle de l'os greffé (50% dans le cas d'une greffe de côte), moindre cependant pour des morceaux prélevés de la crête iliaque, et la nécessité d'une vestibuloplastie environ quatre mois après la greffe.^{4, 10}

3. *Implants*

Utilisés dans les cas de contre-indications d'extension de crêtes ou de greffe osseuse; cette procédure s'est révélée jusqu'à présent inefficace à long terme.

Toutefois, l'utilisation de Proplast (aluminate de calcium poreux) recouvrant le métal permettrait la prolifération de tissu fibreux dans l'implant et assurerait par le fait même sa rétention.^{4, 10}

4) *Traitement prosthétique* —

a) *correction des troubles de l'appareil masticateur*

Souvent les patients âgés présentent des troubles de l'ATM, accompagnés de spasmes musculaires. Il s'agit alors, au moyen de pièces de prothèses temporaires, d'essayer de retrouver la vraie R-C, d'établir une D.V.O. convenable.

A différents intervalles, on doit effectuer un meulage sélectif, le patient ayant de plus en plus tendance à retourner en arrière pour nous donner finalement sa vraie relation centrique.¹¹

b) *préparation de pièces stables et rétentes*

1. *choix des dents:*

- des dents postérieures petites diminuent la pression
- la stabilité est augmentée par la faible inclinaison cuspidienne
- des dents en porcelaine préservent mieux l'occlusion.

2. *extension maximale conforme aux muscles:*

le contrôle musculaire est trop souvent sous-estimé pour augmenter la rétention dans les cas difficiles

3. *extension maximale pour réduire la pression sur la muqueuse.*^{13, 14}

4. Tuckfield est d'avis que la concavité du rebord lingual n'est pas à désirer dans le cas de résorption prononcée puisque les mouvements de la langue augmentent davantage l'instabilité de la pièce.¹³

c) *sélection du type de matériel pour pièce de prothèse*

1. *résine mégy-l-métacrylate: matériel habituellement employé.*

2. *métal coulé: or; alliage Cr-Co; aluminium.*

avantages: meilleure adhésion due à la tension de surface et à la stabilité dimensionnelle accrue.

3. *matériel élastique: silicone.*

indications:

1 *atrophie très prononcée*

- undercuts prononcés
- au-dessus d'une crête pointue
- au-dessus d'une muqueuse mince

limitations du matériel:

- ne peut être utilisé sous des bases de métal
- épaisseur idéale: 2 mm
- technique spéciale
- décoloration, croissance de C. Alb.

d) *méthodes d'articulation*

L'enregistrement de bonnes mesures est une des étapes des plus importantes: R-C, D.V.O.

Ceci est évidemment rendu difficile lors de troubles de l'appareil masticateur où l'on doit faire utilisation de pièces de prothèses temporaires telles que décrites auparavant ou tout au moins utiliser des dents à 0 degré.

e) *morphologie occlusale des dents*

Des dents à zéro degré sont conseillées lors de résorption prononcée ou de troubles de mastication.

f) *soins post-opératoires*

- pâte indicatrice de pression
- remontage sur l'articulateur
- rendez-vous de rappel pour surveiller les blessures.¹³

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8 Page, M. E. Systemic and prosthetic treatment to prevent bone resorption in edentulous patients, *Journal of Prosthetic Dentistry*, vol. 33, no. 5, mai 1975; p. 483.

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12 Klein, I. E. The effect of thyrocalcitonin and growth hormone, *Journal of Prosthetic Dentistry*, vol. 33, no. 4, avril 1975, p. 365.

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1: consulter la référence no 11

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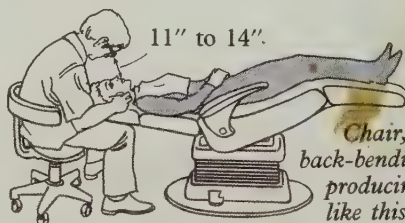
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Canadian Dental Association/Association Dentaire Canadienne



Restorative Dentistry:

Cervical glass ionomer restorations

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and compressive strength amalgams

Effect of indium on dispersion-type amalgam

Pulp irritation and silicate cement

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QDSA negotiates in Quebec

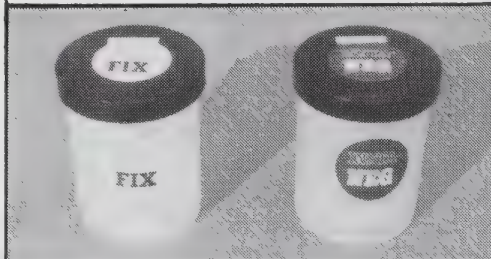
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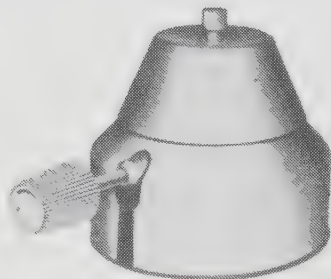
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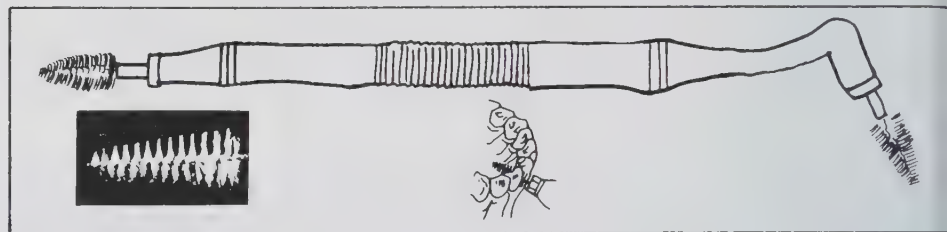


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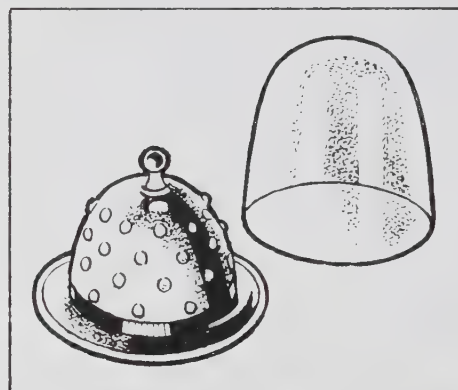
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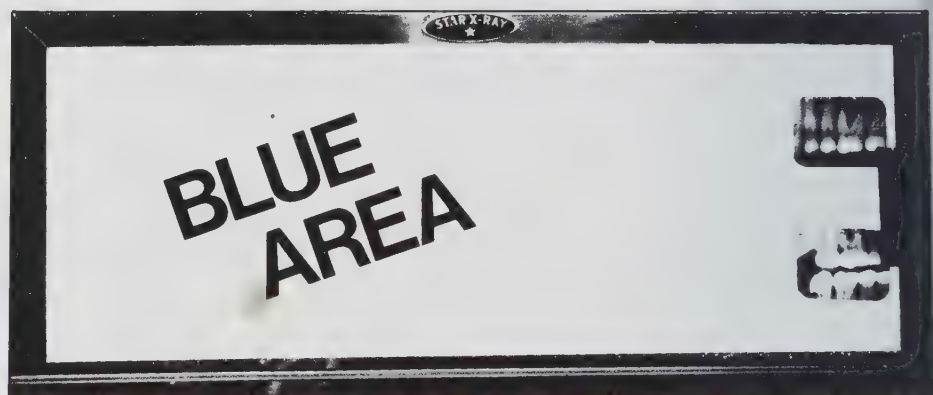
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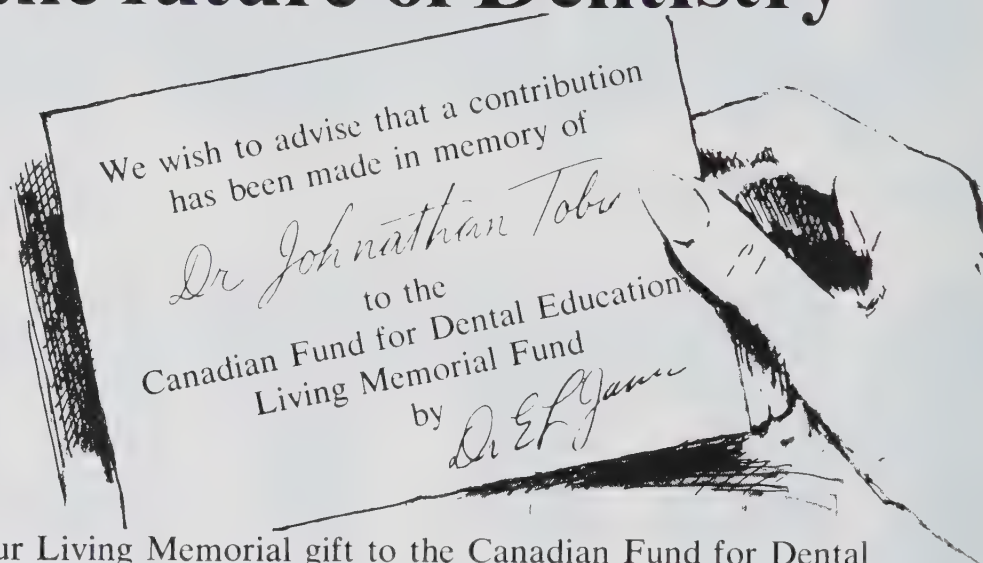
*Beiswanger, B.B., et al.: J. Dent. Child. 45:137, 1978.



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JOURNAL

of the Canadian Dental Association
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February 1979/Volume 45/No. 2

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Announcements/Avis

We urge readers to confirm meeting dates with the contact listed with each announcement.

Canadian Dental Association

1979 National Convention, Quebec City, September 9-12. Contact: Dr. Clément Caron, Convention Chairman, 1979 CDA National Convention, 1575 St. Louis Road, Sillery, Quebec G1S 1G4. Telephone: (418) 527-8969 or 687-5271.

Association Dentaire Canadienne

Congrès national 1979, Québec, 9-12 septembre. Pour renseignements: Dr. Clément Caron, directeur général, congrès 1979 de l'ADC, 1575 chemin St-Louis, Sillery, Québec G1S 1G4. Téléphone: (418) 527-8969 ou 687-5271.

Canadian Meetings

Calgary and District Dental Society

Banff Seminar, March 2-4, 1979. Speaker: Dr. Ken Olson. Contact: Dr. Richard Odland, President, Calgary and District Dental Society, 615, 906-8 Avenue S.W., Calgary, Alberta T2P 1H9.

Third Canadian Congress of Dentistry for Children, Vancouver, April 6-8, 1979. Contact: Dr. G. M. Jinks, Suite 301, 1701 West Broadway, Vancouver, British Columbia V6J 1Y3.

Ontario Dental Association, 112th Spring Meeting, Sheraton Centre, Toronto, May 13-16, 1979. Contact: Mrs.

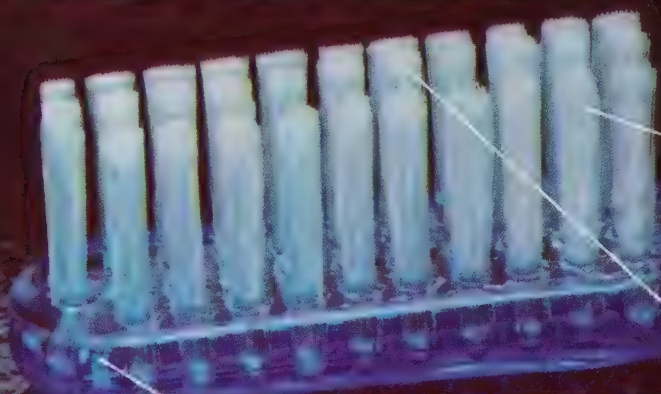
W. C. Durham, 234 St. George Street, Toronto, Ontario M5R 2P2.

Les Journées Dentaires du Québec, Queen Elizabeth Hotel, Montreal, May 27-31, 1979. Contact: Dr. Morton R. Lang, 5253 Decarie Blvd., Montreal, Quebec H3W 3C3. Telephone: (514) 481-0397.

British Columbia College of Dental Surgeons 1979 Convention, Hotel Vancouver, June 5-8, 1979. Contact: College of Dental Surgeons of British Columbia, 1125 West Eighth Avenue, Vancouver, British Columbia V6H 3N4.

Alberta Dental Association, Annual Convention, Red Deer, Alberta, June 7-9, 1979. Contact: Dr. Ron Gish, Lacombe, Alberta.

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Western Canada Dental Society Convention, Hotel Saskatchewan, Regina, June 7-9, 1979. Contact: Dr. I. E. Donavon, 205 McCallum Hill Building, Regina, Saskatchewan S4P 2G6.

7th International Symposium on Dental Hygiene, Vancouver, British Columbia, July 25-28, 1979. Contact: 7th International Symposium on Dental Hygiene, c/o Venue West Ltd., 1704-1200 Alberni Street, Vancouver, British Columbia V6E 1A6.

Canadian Association of Oral and Maxillofacial Surgeons Annual Meeting, Quebec City, September 8-11, 1979. Theme: Maxillofacial Trauma. Contact: Dr. Victor Goodyer, 565 St. Jean, Quebec City, Quebec G1R 1P5.

Canadian Association of Orthodontists, 31st Annual Meeting and Convention, Hotel Frontenac, Quebec City, September 8-9, 1979. Contact: Dr. R. Faith, 605-1538 Sherbrooke Street West, Montreal, Quebec, or Dr. J. J. Schachter, Box 952, Saskatoon, Saskatchewan.

International Meetings

Virgin Islands Dental Association Meeting, St. Thomas Sheraton Hotel and Marina, February 29 - March 3, 1979. Contact: Virgin Islands Dental Association, c/o Travel Services, Inc., P.O. Box 1691, Charlotte Amalie, V. I. 00801.

Thomas P. Hinman Dental Meeting, sponsored by the American Dental

Association, Atlanta, Georgia, March 18-22. Contact: Mrs. D. Broach Thurston, 1524 Brianwood Rd., Decatur, Georgia, 30033.

International Conference on Oral Implantology, Jerusalem, Israel, April 1-5, 1979. Contact: Conference Travel of Canada Ltd., 11 Adelaide Street West, Suite 903, Toronto, Ontario M5R 1L9.

British Dental Association Annual Conference, Cardiff, Wales, April 5-8, 1979. Contact: British Dental Association, 64 Wimpole Street, London W1M 8AL.

Asian Pacific Dental Federation, 9th Dental Congress, Merlin Hotel, Kuala Lumpur, Malaysia, April 23-27, 1979. Contact: Dr. Lim Chee Shin, P.O. Box 234, Petaling Jaya Selangor, Malaysia.

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Irish Dental Association, Annual Scientific Congress, Waterville Lake Hotel, County Kerry, April 25-28, 1979. Contact: Conference Secretary, Irish Dental Association, 29 Kenilworth Square, Dublin 6, Ireland.

International Dental Congress in the Middle East, Damascus, April 30 - May 2, 1979. Organized by the Syrian and Jordanian Dental Associations with the assistance of the Fédération Dentaire Internationale and the World Health Organization. Contact: FDI, 64 Wimpole Street, London W1M 8AL U.K.

American Dental Society of Europe, 85th Meeting, St. Moritz, June 25-29, 1979. Contact: Brian J. Parkins, Society Secretary, 57 Portland Place, London W1N 3AH, England.

Second Asian Pacific Congress in Anxiety and Pain Control in Dentistry, Honolulu, Hawaii, July 2-5,

1979. Contact: Australian Society for the Advancement of Anaesthesia and Sedation in Dentistry, Suite 904, Hooker House, 175 Pitt Street, Sydney, New South Wales 2000.

Society for the Advancement of Anaesthesia in Dentistry, Second International Congress on Modern Pain Control (Sedation, Anaesthesia and Analgesia in Dentistry), Royal Lancaster Hotel, London, England, July 13-16, 1979. Contact: Secretary, SAAD '79, 53 Wimpole Street, London W1M 7DF, England.

7th International Symposium on Dental Hygiene, Vancouver, British Columbia, July 25-28, 1979. For details see listing under "Canadian Meetings".

Fédération Dentaire Internationale, 67th Annual World Dental Congress, Paris, France, October 20-26, 1979. Contact: FDI, 64 Wimpole Street, London W1M 8AL, U.K.

Periodontal Archives and Resources Center

The American Academy of Periodontology recently announced the establishment of the Periodontal Archives and Resources Center (PARC). The center is located in the national headquarters of the AAP in Chicago. The PARC will serve as a source of historical, informational and archival materials related to periodontology. It is anticipated that PARC will become a centralized source of periodontal information which may be used by members, historians, students, etc. Those interested in contributing either material or information on the locale of items of interest to Periodontology, please write:

Dr. Seb Ciancio, Chairman, Committee on PARC, American Academy of Periodontology, 211 E. Chicago, Room 924, Chicago, Illinois 60611.

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FEDERAL FINANCE MINISTER RESPONDS TO LETTER FROM CDA PRESIDENT

*Dr. R. L. Moran,
President,
Canadian Dental Association.*

Dear Dr. Moran:

Thank you for your recent letter concerning the November 16, 1978 budget measure affecting the small business deduction. Since then I have received many useful submissions regarding the proposed changes, all of which I have considered with care in the course of preparing a draft regulation.

I am attaching, for your information, a copy of a press release which I issued on December 19, 1978 along with the proposed regulation. This material outlines the details of my position in respect of the small business tax deduction.

As I mentioned in the budget address, small businesses in Canada enjoy very favourable tax treatment. Indeed, this treatment is much more favourable than in the United States. The cost of the small business deduction to the Canadian treasury is in the area of \$1 billion. This cost must be

made up by higher taxes on other taxpayers. To permit the small business deduction to be used by those for whom it was never intended would inevitably lead to a higher tax burden on other taxpayers, including individuals and unincorporated businessmen. I have to ensure, therefore, that the small business tax deduction is effectively targeted.

It is highly desirable that small businesses, appropriately defined, receive substantial encouragement through the tax system. They need this in order to cope with business risks, to accumulate capital for growth and expansion of job opportunities, and to compete with large Canadian and foreign business corporations.

The small business deduction was introduced with this in mind. But it was introduced at a time when the incorporation of doctors, lawyers, dentists and accountants was not an issue and it was never intended that they should be given such special tax treatment. These professions experience a fairly stable demand for their services and entry into them is, quite rightly, carefully control-

led. The business risks these professionals face are not the same as those of small businessmen whose prosperity is highly sensitive to economic and competitive conditions.

The problem became more urgent with the rapid move toward the incorporation of professionals in one province, since this resulted in federal tax falling very unevenly between provinces. My proposals will help ensure that basic equity is preserved for Canadian taxpayers no matter where they live in Canada.

It is, of course, most important to note that the new rules do not restrict the professional's right to incorporate. Indeed, the important tax advantages of incorporation unrelated to the small business deduction remain intact. In this light, I believe the changes are necessary and fair, ensuring that the tax burden is shared equitably by all Canadians.

Yours sincerely,

*Jean Chrétien
Minister of Finance
Ottawa, Ontario*

MORE ON PROFESSIONALS AND THE SMALL BUSINESS DEDUCTION

On December 19, as a follow up to the November 16 budget, the federal Finance department issued a draft of its proposed legislation and regulations regarding the use of the small business deduction by incorporated professionals and by service corporations related to professional firms.

The timing of the release, im-

mediately before Parliament recessed for its Christmas break, and the Minister's indication that careful consideration would be given to any representations made to him before the bill is introduced in the New Year, would suggest this was intended to be an exposure draft and that the provisions as presented will likely be altered

to some extent before becoming law.

It is interesting to note, however, that in any event the government does not intend to implement the changes immediately. As proposed, the revised small business deduction rules will not apply to existing corporations until their taxation years commencing after

Continued on page 50



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significantly reduces the incidence of caries. Thus, the use of Colgate in conjunction with your fluoride applications and regular dental treatments should result in an even greater reduction in the number of cavities.

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"Colgate with MFP has been shown to be an effective decay-preventive dentifrice that can be of significant value when used in a conscientiously applied program of oral hygiene and regular professional care."

*T.M.

Canadian Dental Association

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1979. For corporations formed after November 16, 1978, the new rules will take effect for taxation years commencing after 1978. This delay is intended to allow existing corporations "ample time for adjustment".

Unless major alterations are made before the new rules are enacted, certain corporate business activities will be identified as "non-qualifying business" for purposes of determining the small business deduction.

An incorporated business carrying on the professional practice of an accountant, dentist, lawyer or medical doctor will be "non-qualifying" if, under the law of one or more provinces, a corporation is not permitted to carry on such a practice. At present, only Alberta permits such professionals to incorporate, and the amendment is obviously intended to put incorporated

Alberta professionals on much the same basis for tax purposes as their unincorporated fellow practitioners in other provinces.

The proposed rules for determining the eligibility of a related service corporation (sometimes called a management company) are somewhat more complex. This is partly due to the difficulty of drawing an equitable line between those corporations that carry on a bona fide active business and those the government feels are used to transform professional earnings into income qualifying for the small business tax incentive. Obviously the regulations in this area were drafted hastily and will require considerable revision before they become law.

As presented, the regulations propose that a business will be non-qualifying if its principal purpose is to

provide managerial, administrative, financial, maintenance or other similar services to a business connected with it. How one interprets "principal purpose" is not disclosed, and no mention is made of tests based on volume of business or degree of activity. Instead, it clearly appears to be the government's intention to categorize most of these companies as non-qualifying businesses, solely or primarily on the basis that the majority of the service corporation's shares are owned by the same persons (or related persons) who own the connected business.

Although it seems unlikely that Finance will reverse its basic position on this issue, it is to be hoped that the regulations as finally passed will be capable of being applied on a more equitable basis than has been suggested.

The Canadian Dental Association's 1979 National Convention will be held September 9-12 in Quebec City. Dr. Clément Caron, Convention Chairman, has announced that details of the exciting scientific and social program will be announced in future issues of the Journal. Mark your calendar now and plan to attend this year's convention in beautiful Quebec City.



Canadian Academy of Endodontics

Dr. John M. Phillips of Oshawa, Ontario, was elected president of the Canadian Academy of Endodontics during the Academy's 14th annual meeting held in Winnipeg last September. Other members elected to the 1978-79 executive included Dr. Stephen M. Brayton of Halifax, vice-president, and Dr. F. Bruce Burns of Toronto, secretary-treasurer.

The Fourth Annual Teacher's Workshop, held in conjunction with the Academy's 1978 annual meeting, attracted representatives from Canada's 10 dental schools.

Saskatchewan College of Dental Surgeons

The College of Dental Surgeons of Saskatchewan has announced that Dr. J. H. Harder of North Battleford has been elected president for the 1979 term of office. Dr. F. M. Bourassa of Regina was elected vice-president.

Other members elected to serve on the 1979 Council include: Drs. B. K. Arora, Saskatoon; E. W. Gherasim, Regina; J. W. Niedermayer, Regina; J. B. White, Regina and E. W. Zak, Saskatoon. Dr. R. A. Tratch of Rosthern will serve as the immediate past president.

Correction

In the article "Allergy to a Partial Denture Casting — Case Report" which was published in the November, 1978, issue of the Journal, pages 466-468, an acknowledgement was omitted from the manuscript. In the article, Dr. Jeffrey alludes to the problems he had in obtaining samples for allergy testing. The only person he was able to find who would provide him with test samples was Mr. Duane Chaluke of Dental Ceramics of Canada. The authors wish to recognize and acknowledge his service in this matter.

CONNECTICUT AND ALBERTA UNIVERSITIES CO-OPERATE IN COMPREHENSIVE STUDY

The University of Connecticut School of Dental Medicine is conducting a study of host factors in caries susceptibility in cooperation with the University of Alberta Faculty of Dentistry. The subjects of the study are twelve Alberta located colonies of the Hutterite Brethren, a religious sect of Anabaptists who are a literate, non-mobile group that live isolated from the mainstream of modern life and amenities. This comprehensive study of the pedigrees, diet, psychological testing and complete dental examination of approximately 20,000 persons

is being funded by the Public Health Service of the United States, Department of Health, Education and Welfare. The Department of Community Dentistry and Manpower Development of the University of Alberta is working in conjunction with the Department of Behavioral Sciences and Community Health of the University of Connecticut School of Dental Medicine in this long-term project from which it is hoped to obtain information correlating genetic and host factors with dental caries and periodontal disease susceptibility.

CDA RETIREMENT SAVINGS PLAN

Unit values of the Canadian Dental Association's Retirement Savings Plan stood as follows on December 31, 1978:

<i>Common Stock Fund</i>	\$37.543
<i>Fixed Income Fund</i>	\$21.721
<i>Guaranteed Fund</i>	\$15.503
<i>Balanced Fund</i>	\$11.426

Total assets (market value) of the plan were \$32,011,588.28

The previous month's figures, as of

November 30, 1978, stood as follows:

<i>Common Stock Fund</i>	\$36.483
<i>Fixed Income Fund</i>	\$21.567
<i>Guaranteed Fund</i>	\$15.207
<i>Balanced Fund</i>	\$10.960

Total assets (market value) of the plan were \$31,571,569.69.

For further information write to: CDA-sponsored Pension and Insurance Plans, 234 St. George Street, Toronto, Ontario M5R 2P2.

CDSPI AND CLAIMS DISPUTES

In any insurance plan, disputes over claims handling is a common phenomenon. An individual policy does not give the insured person much room for maneuvering. The insurance company will go strictly by the word of the policy (very often contained in the fine print), and as long as the company's legal department rules that a decision is legally sound, the insured's complaint will be filed away.

One of the advantages with a professionally sponsored Group Insurance Plan is found in the area of claims

disputes. So far this year the Management Committee of CDSPi has studied seven cases of disputed claims. The Committee negotiated with the insurance carrier, and all cases have been resolved to the satisfaction of the participants.

The National/Provincial Long Term Disability and Office Overhead Policy specifically provides that, in the event of a dispute over the facts or the amount of indemnity, the claim may be submitted to a Claims Review Committee.

QDSA NEGOTIATES IN QUEBEC

Clyde Covit DDS
Member of the QDSA Negotiation Committee

Following lengthy negotiations between the Quebec Dental Surgeons Association and the Quebec Ministry of Social Affairs, the present Quebec Denticare Program was implemented in May 1974 to provide dental health care benefits to children from birth to seven years of age.

The QDSA membership accepted the agreement by a majority of four for a one year period, cognizant of the fact that failure to accept the plan would mean implementation by decree. This one year agreement has now been extended on a gradual basis over the last three-and-a-half years to include children up to 14 years of age.

Fortunately for the profession, the initial agreement did not include three surface restorations for permanent molars and all services for bicuspid (excluding extractions) as they do not apply to children from birth to seven years of age. This move has proved very fruitful as the present government has now promised that the dental health care program for children will be extended during their mandate to cover children up to 18 years of age. While it is the government's privilege to extend the present agreement in relation to age, it must, in order to deal with services, either return to the negotiating table with the dental profession or implement any changes by decree.

With the election of the present government in November 1976, the QDSA requested that negotiations begin as soon as possible. The Minister required time to form a comprehensive negotiation team. Negotiations began five months later, April 1977, two years after the so-called termination of

the initial agreement and with an incomplete government negotiating team.

It must be stressed that at the time, in order to help matters progress rapidly, the QDSA requested that the normative clauses be identical to those which had already been granted to the Federation of General Practitioners in September 1976.

These normative clauses were drafted to assure continuous control of the profession by the profession with sufficient guarantees for all dentists practising in their various milieus.

The contentious issues which developed at the negotiation table pertaining to the normative clauses were basically related to individual contracts, modes of remuneration and auxiliary personnel. Through active negotiations the QDSA was able to obtain the goals set out in this regard.

There will be individual contracts for those dentists willing to be employed by the government. These contracts, however, must contain the specific clauses that have been negotiated and will only be signed with the approval of the Association following careful scrutiny by QDSA legal advisors to ensure the dental practitioner has all the guarantees which must appear in the contract. The principle of sessional duty as a form of remuneration will only be applicable in a limited number of circumstances, as for example when treating handicapped children in institutions. Everyone else will be paid on a fee-for-service basis or on a straight salary basis. Sessional duty is simply a contract fee for a block of three hours and although it is a form of

salary there are no fringe benefits and the total amount is, of course, then taxable.

There will be no dental nurses in the Province of Quebec. QDSA has obtained a clause for the new agreement which states that contracts can only be signed with doctors and dentists for the rendering of irreversible therapeutic acts. Therefore, there will be no dental nurses or auxiliary personnel of a different name who would be mini-dentists.

Finally, the licencing body, The Order of Dentists of Quebec has submitted their recommended list of acts which can be delegated for government approval according to Bill 250. Included in this submission are the principles which the Quebec Dental Surgeons Association fought for in the best interests of the profession and the public.

The QDSA was concerned that since some provinces are establishing periodontal, restorative and prosthodontic modules for auxiliary personnel, it could be used against the profession at the negotiation table as the split act concept eventually leads to a split fee, even though the dentist assumes the ultimate responsibility. To this end, the QDSA took a firm stand, even against the delegation of the insertion of amalgams for example, in the knowledge that the end result would be borne out at the negotiation table. This is not just a theory for it has been proven in government proposals that where the proposed fee for preventive services has been reduced, the services are delegated to dental hygienists in most circumstances.

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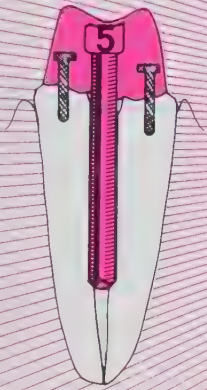
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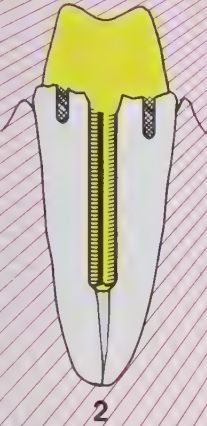
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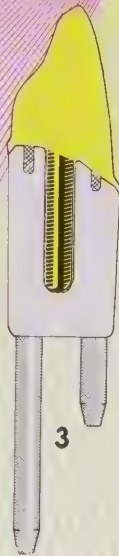
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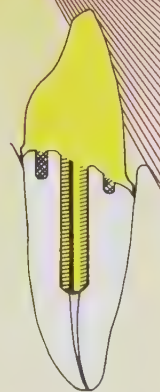
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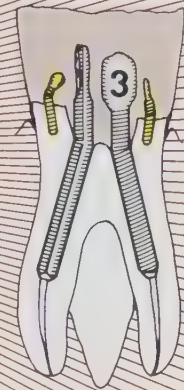
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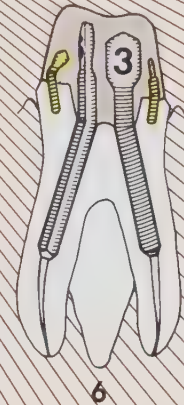
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The profession stood behind the QDSA in order to achieve these guarantees and controls, and an agreement in principle was reached in May 1978 after over 1,400 dentists withdrew from the plan. The agreement is contained in a text of over 60 legal-size sheets.

During the withdrawal, the practitioner still only charged the government fee, but was paid by the patient at the time of the visit and the patient was then reimbursed by the government. It appears that the administrative hassle created for the government was phenomenal and generated enough pressure to sway the government's attitude to what the Association felt was imperative to maintain control of the profession.

The monetary issue and the corresponding rules of application were left to the last as the public, media and other unions were, for the first time, on the side of the profession with regard to the above issues. The government, on the other hand, wished to discuss the monetary issue with the normative clauses, but the QDSA had no part of such a tactic as it was realized the government could use this issue against the profession in the media.

It must be noted that on April 12, 1978, the Minister of Social Affairs contacted all the dentists by letter and offered them an increase, which proved in fact to be a decrease of one per cent, even though this monetary offer had not been discussed at the negotiation table.

Once agreement was reached with regard to the normative clauses, the QDSA requested an increase of 18 per cent, or four per cent annually in their monetary demand of May 23, 1978 in an attempt to reach a rapid settlement and to neutralize the yearly increases in office expenses which for the period between May 1974 (when the plan went into effect) and July 1978 (when it was anticipated a new agreement would be signed) has been calculated at 36 per cent (Cost of Practice Survey-Blondeau & Compagnie). Actuaries for the Ministry of Social Affairs have indicated that dental operating costs are 50 per cent of gross revenue and it is simple arithmetic to take half of 36 per cent to arrive at 18 per cent.

For such a gesture, the Association was told it would receive an answer within three weeks — it took three months.

The government's counter offer August 22, represented an increase of 7.85 per cent or 1.8 per cent annually. At the same time, the Minister took the opportunity to publicly declare that he had made an offer to the dental profession which was equivalent to that which was accepted by the medical profession, an increase of 28.5 per cent.

How could the Minister make such a statement? It is quite simple. He took into consideration the increase in fees which were offered for examinations, radiographs and restorative services and did not take into consideration the decrease of 23.32 per cent for preventive services.

This government offer also contained such clauses as: a life-time guarantee for stainless steel crowns including recementation; root canal treatment for anterior teeth, when if one was to commence with such coverage, one should commence with the posterior teeth; root canal treatment guaranteed for life; teaching and demonstration of oral hygiene measures only once in the life-time of the child; acid-etch restorations for devitalized teeth would be a covered service and the pivot that is required for retentive purposes would not be a covered service; submission of radiographs to the Quebec Health Insurance Board in post treatment situations etc. etc.

This offer was rejected and the Minister took the initiative to write to the profession again on September 14, to denounce the Association for requesting the 28.5 per cent (as per his public declaration) increase.

The government's position did not change and although negotiations continued on a regular basis with regard to the rules of application, the 7.85 per cent figure remained the same.

Faced with this situation, over 1,600 dentists submitted notices to the Quebec Health Insurance Board that they would become non-participants in 30 days, that is, as of October 31. As a non-participant the dentist treats those children from birth to 14 years of age as

any other patient — a fee is charged for a service that is rendered and the patient would not be reimbursed by government. No serious negotiations took place pertaining to the monetary issue during those thirty days.

Once again QDSA offered on October 25, to take part in intensive negotiations bearing in mind that the Association could not accept an increase of 7.85 per cent for a contract which would supposedly terminate October 31, 1979, after having been a party to an agreement which had been prolonged for three-and-a-half years without a fee increase.

In the last ditch effort, the Association deposited a new monetary offer on October 28, in which the demand was reduced to an increase of 15 per cent or 3.4 per cent annually. The government replied on October 31 with a new counter offer. Although the monetary offer was maintained at 7.85 per cent, a new element was introduced with this final and *global* offer.

The representatives of the Ministry of Social Affairs announced that if their offer was refused the Minister would pass a special law which would establish working conditions less favourable than those contained in their final and *global* offer.

However, since October 31, two new elements have surfaced. November 2, the Minister of Social Affairs announced in the National Assembly that he was convening a parliamentary commission for November 7 with regard to the dental question, and that he himself would be a member of the commission. November 3, the QDSA refused the government's final and *global* offer at the negotiating table on the basis of content and harassment as indicated by the Minister that a special law would be implemented.

It was realized that it was most probable that the Minister had already decided to implement a law which could impose certain working conditions upon the profession. It was also believed that the parliamentary commission convened by the government was just a stepping stone to implement such a law. However, QDSA accepted the invitation to sit on the commission

to inform the members of the profession's side of the present conflict and to indicate the Association's respect for the National Assembly who had created the parliamentary commission.

The six major points of contention are: the fee increase; a lump sum payment as retro-active compensation; parity with the medical profession; a ceiling on earnings; the use of the international procedure codes; and a proposed package deal for children and social welfare recipients.

1. Fee Increase

The dentist in private practice who participated in the Denticare Program was remunerated on a fee-for-service basis which was established in May 1974. As a result of the length of time that has expired there is contention with regard to the rate of increase in fees which is detailed above.

2. Compensation

Even though the general practitioners and specialists in the medical profession were able to sign an agreement in 1976 that provided for compensation, the dental profession is not requesting retro-activity of the same nature.

It is felt that it would be just and reasonable to allow compensation for the period of time between July 1, 1978 and the actual date when the new agreement is signed.

The Ministry of Social Affairs has offered a lump sum payment as retro-active compensation to the Association based on a formula which has been agreed to by the two parties. However, once again there is contention with the fact that the government is using 7.85 per cent in their calculations for each dentist while the profession is using 15 per cent which represents the increase in fees that are being sought.

3. Parity

The dentists who render services in institutions can be remunerated on a fixed yearly salary. The problem in this situation is that the QDSA has requested that the salaries be equivalent to those in the medical profession while the Ministry of Social Affairs has offered 95 per cent of the salaries of the

general practitioners even though QDSA's request exemplifies what is presently in effect in institutions.

4. Ceilings

The Minister wishes to impose a ceiling on the individual income of dentists which would imply that for each quarter of the year the dentist who earns \$33,250 would then receive only 25 per cent of the listed fees for any other service rendered during that quarter.

The QDSA feels that this measure is restrictive, inefficient and unjust. Restrictive and inefficient as the dentist who treats only children and is rendering a needy service would then have to turn his attention to an adult clientele.

Unjust as the specialist in pedodontistry would lose his specialty if forced to practice outside his specialty. It appears unreasonable that as a result of the fact that there is a need for pedodontists that their productivity should be limited.

Furthermore, must the Association accept a reduction in services in outlying areas, must it stop a younger dentist from being productive during his/her initial years of practice and must it accept 25 per cent of a fee when expenses represent 50 per cent of income?

5. International Procedure Codes

The Quebec Health Insurance Board has utilized four number procedure codes and QDSA has requested that the five number international procedure codes be utilized. However, the QHIB feels that there will be serious implications with the implementation of the five number international codes.

6. A Package Deal

The Minister wishes to reach an agreement with the QDSA pertaining to children up to 14 years of age and for social welfare recipients at the same time even though the necessary legislative amendments to allow him to negotiate in this matter have not been implemented in the National Assembly.

Nevertheless, on November 7, 1978, three years, six months and seven days after the termination of the original one year agreement, the QDSA was faced with a parliamentary commission which would appear to be the stepping stone which the Minister requires to pass his special law.

Further details from Dr. Covit will be forthcoming once negotiations are concluded.



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Le Fonds canadien pour l'enseignement dentaire annonce que l'on accepte dès maintenant des demandes de bourses de formation pour les enseignants/chercheurs pour l'année universitaire 1979/80. Les candidats peuvent obtenir les formules de demande et tout renseignement supplémentaire en s'adressant au bureau du doyen de n'importe quelle faculté dentaire du Canada ou au Fonds canadien pour l'enseignement dentaire, Suite 205, 44 ouest, avenue Eglinton, Toronto, Ontario M4R 1A1.

Conditions

Les candidats doivent être des citoyens canadiens ou posséder le statut d'immigrants reçus. Ils doivent avoir terminé un programme universitaire en médecine dentaire, en hygiène dentaire ou en programme en sciences et être admissibles à un programme post-universitaire.

Les candidats seront tenus de signer une déclaration indiquant leur intention de devenir un enseignant ou un chercheur à une faculté dentaire canadienne ou à une école d'hygiène dentaire. La préférence sera accordée aux candidats qui se destinent à une carrière d'ensei-

gnement ou de recherche *à plein temps*. Deux jours d'enseignement par semaine constituent l'engagement minimal à cet égard. Le bénéficiaire d'une bourse s'engage à consacrer à l'une des facultés dentaires une année d'enseignement à plein temps pour chaque année d'obtention d'une bourse entière, ou d'une année d'enseignement à mi-temps pour chaque année d'obtention d'une demi-bourse. Rarement, lorsque le bénéficiaire d'une bourse ne s'acquitte pas de ses obligations d'enseignement, les bourses doivent être remboursées en totalité.

Chaque bourse correspond à une année d'études au niveau post-universitaire. La bourse peut être renouvelée lorsque les progrès sont satisfaisants.

Le FCED décerne, tout les ans, deux types de bourses:

- (a) La bourse entière du Fonds, décernée aux candidats qui s'engagent légalement à enseigner à plein temps lorsque leur formation est terminée, ou qui ont un ferme accord avec le doyen à cet effet.
- (b) La demi-bourse du Fonds, décernée aux candidats qui s'engagent légalement à enseigner à mi-temps lorsque leur formation est terminée ou qui ont un ferme accord avec le

doyen à cet effet, ou aux candidats inscrits à un programme de base en sciences (qui n'a une valeur monétaire que si l'étudiant travaille à une université à la suite de sa période de formation).

La préférence sera accordée aux candidats qui commencent leur formation à l'aide d'une bourse du FCED avant, ou dans les cinq années qui suivent le début de leur carrière d'enseignant ou de chercheur.

Le montant des bourses sera déterminé tous les ans par le Comité consultatif sur la sélection des candidats et par le Conseil des fiduciaires. En vue de financer en totalité leurs études, il est entendu que les bénéficiaires des bourses du FCED obtiendront de diverses autres sources, des moyens supplémentaires de subsistance.

Depuis le début du programme en 1964, le Fonds a accordé 189 bourses s'élevant à un total de \$513,500, à 121 dentistes qui désiraient poursuivre une carrière dans l'enseignement ou la recherche. Vingt-sept bourses, s'élevant à un total de \$31,689 ont également été distribuées à 22 hygiénistes dentaires dans le but de les aider à se préparer à une carrière d'enseignement dans une institution canadienne.

UNE BOURSE DU FCED DE \$1,500 POUR UN PROFESSEUR D'UNE FACULTÉ DENTAIRE

Le Fonds canadien pour l'enseignement dentaire invite la soumission de demandes provenant d'enseignants dentaires, en ce qui concerne la bourse subventionnée en 1979 par la compagnie Warner-Lambert Canada Limitée. Dernière limite pour la soumission de ces demandes: 1er mars 1979.

L'objectif de cette bourse est de procurer à un professeur qui enseigne à l'une des facultés dentaires du Canada l'occasion de perfectionner et d'approfondir ses connaissances dans tout domaine de l'enseignement ou de la recherche qui l'intéresse.

Les candidats doivent être employés

à plein temps à une faculté dentaire du Canada et posséder un minimum de cinq ans d'expérience dans l'enseignement universitaire.

Le programme d'études proposé doit être nettement défini et sa durée sera au moins d'un mois (environ). Les lettres de demande, ainsi que la description

détaillé du programme proposé doivent être adressées au Fonds canadien pour l'enseignement dentaire, Suite 205, 44 Ouest, avenue Eglinton, Toronto, Ontario M4R 1A1, avant le 1er mars 1979. Ces demandes seront accompagnées d'un curriculum vitae et d'une lettre d'appui du doyen ou d'un autre membre approprié de la faculté, indiquant l'approbation de la période d'études ainsi que les avantages qui pourront en découler aussi bien pour la faculté que pour la personne intéressée.

A la fin de la période d'études, le bénéficiaire de la bourse sera tenu de transmettre au FCED un rapport par écrit décrivant les travaux effectués lors de ce stage.

Tous les renseignements concernant la bourse peuvent être obtenus au bureau du doyen des facultés dentaires ou au Fonds canadien pour l'enseignement dentaire.

Les demandes seront soigneusement étudiées par le Comité consultatif sur la sélection des candidats et le nom du candidat choisi sera soumis au Conseil des fiduciaires pour approbation.

En 1978, le gagnant de la bourse était le Dr David Donaldson de l'Université de Colombie-Britannique qui a utilisé ces fonds pour faire un stage spécial d'études au Département d'anesthésiologie de l'University of California, à Los Angeles.

Cette bourse annuelle, offerte par Warner-Lambert Canada Limitée, a été établie en 1971.

Régime d'épargne-retraite de l'ADC

Les valeurs respectives du Régime d'épargne-retraite de l'Association Dentaire Canadienne étaient les suivantes au 31 décembre, 1978:

<i>Fonds d'actions ordinaires</i>	\$37.543
<i>Fonds à revenu fixe</i>	\$21.721
<i>Fonds garanti</i>	\$15.503
<i>Fonds de placement équilibré</i>	\$11.426

L'avoir total (valeur marchande) du régime s'élevait à \$32,011,588.28

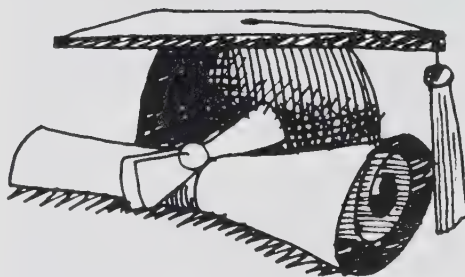
Au 30 novembre, 1978, les chiffres du mois précédent étaient les suivants:

<i>Fonds d'actions ordinaires</i>	\$36.483
<i>Fonds à revenu fixe</i>	\$21.567
<i>Fonds garanti</i>	\$15.207
<i>Fonds de placement équilibré</i>	\$10.960

L'avoir total (valeur marchande) du régime s'élevait à \$31,571,569.69.

Pour obtenir tout renseignement supplémentaire, prière de s'adresser aux: Régimes des rentes et d'assurances subventionnés par l'ADC, 234 rue St. George, Toronto, Ontario M5R 2P2.

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CERVICAL GLASS IONOMER RESTORATIONS: A CLINICAL STUDY

Larry G. Lawrence, DDS, MScD, FRCD(C)
Toronto

One hundred and seventy-five smooth cervical abrasion lesions were restored with a glass ionomer cement (ASPA) and evaluated clinically at least six months after placement. Most restorations remained intact and resisted wear. Thirteen restorations were lost. The patient's habitual brushing pattern appeared to be a significant factor in the surface integrity of the restorations.

The toothbrush as an oral hygiene instrument has a long history and has assumed a variety of shapes.¹ However, its use has not always had a positive effect. Enthusiastic preventive-motivated patients produce iatrogenic tooth lesions by abrading and removing vestibular tooth material. This lesion is not new: Miller² described the defect in "Dental Cosmos" in 1907, and Black³ listed five types of cervical abrasions in his 1914 edition of "Operative Dentistry". Hirschfeld¹ in his lengthy textbook on the toothbrush described "smooth hard defects usually associated with toothbrushing, are in most instances caused almost entirely by mechanical wear." In his case histories numbers 127, 301 and 303, he noted particularly the damage caused by long horizontal strokes, more marked on the left side than on the right in a right-handed patient; i.e. the contralateral side to the patient's manual preference. These lesions gradually become deeper with resulting sensitivity to thermal and mechanical stimuli, and can, in fact, endanger the pulp.

In the past, treatment has consisted of removing additional tooth structure to provide mechanical retention of a filling material. In 1972, Wilson and Kent⁴ introduced a new glass ionomer cement (ASPA). This was a "glass ionomer cement based on the hardening reaction that occurs between certain species of ion-leachable glasses and aqueous solutions of polyacids, in particular the poly(carboxylic acid)". Through a crosslink of polyionic chains, an insoluble gel is formed. The cement is an extension of the zinc polycarboxylate cement introduced by Smith⁵ in 1968, which utilizes the free carboxyl molecular structure ($-\text{COOH}$) to interact and chelate with Ca^{++} ions

in the tooth structure, forming an adhesive molecular bond. By using special ion-leachable alumino-silicate glasses and combining it with a reactive liquid mixture of polyacrylic acid and a co-polymer itaconic acid, a cement gel is formed. The resulting cement appears to have the ability to adhere to tooth structure. It is not opaque like zinc phosphate based cements but has some of the translucency of the silicate cements, exhibits a superior surface and resists acid attack⁶.

True adhesive bonding is rarely achieved and difficult to prove when dealing with materials in the oral milieu. Driessens⁷ and Glantz⁸ recently described the parameters and difficulties in achieving true adhesion. However, adhesion is claimed for both zinc polyacrylate and glass ionomer cements.

This clinical study examines the fate of ASPA restorations in smooth cervical abrasion defects. There was no instrumentation preparation of the tooth surface other than thorough scrubbing. The restorations were placed in the context of a busy dental practice.

Materials and methods

The patients selected in the study had cervical defects, caused by apparent toothbrush abrasion, in one or more quadrants. Forty patients were monitored in the study.

Steps in restoration placement:

1. The tooth surface was cleaned with a non-fluoride prophylaxis paste in a rotary applicator.
2. The surface of the defect was scrubbed with a surface conditioner of 50 per cent citric acid, on a cotton pledget in cotton pliers for 15 seconds.
3. The tooth surface was thoroughly rinsed with water, dried, and maintained dry.
4. A soft metal matrix was burnished over the defect area to conform to the contour of the tooth.
5. Powder and liquid were mixed to a thick creamy consistency. When the mixing spatula was lifted from the surface of the cement, the mixed cement followed and separated from the spatula approximately an inch above the surface of the pad. It is important to have free surface liquid to interact and wet the tooth surface.



Fig 1 Cervical abrasion lesions on teeth 14, 15 and 16, before restoring.

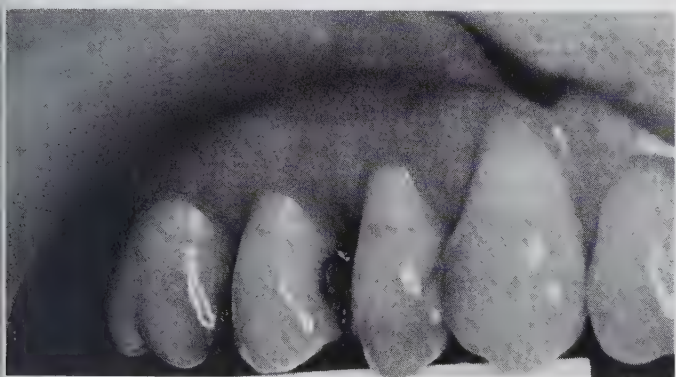


Fig 2 Glass ionomer restorations, nine months after placement.

The cement was wiped into place until over-filled, and the metal matrix applied and held firmly in place for 30 seconds.

The matrix was peeled off after at least five minutes.

Excess cement was removed with a sharp scaler and the restoration was contoured and trimmed with a multi-fluted carbide bur under a water coolant. A gentle polish with prophy paste created an acceptably smooth surface. At a later time, following additional hardening, the restoration can be polished more vigorously.

A covering of copal varnish was applied to the surface.

After at least 200 surfaces had been placed, as many patients as possible were recalled to review and photograph all restorations that had been in place longer than six months. Forty patients attended the evaluation session. The restorations were assessed as: (a) retained, or lost, or (b) if retained, amount of wear apparent.

Results

In the 40 patients screened, 175 surfaces had been filled with ASPA. The majority of the restorations were well retained and showed little evidence of wear; 61 of the surfaces had restorations in place 12 to 18 months. Thirteen restorations were lost after placement. Eight of these

restorations were replaced, of which five were successfully retained. Three failed a second time in one patient who was an aggressive brusher. The other 10 missing restorations were not replaced because the defects were very shallow (less than 1 mm). In almost every instance, filling loss occurred within a short period after placement (12 of the 13 fillings lost), indicating an inadequate adaptation of the cement. Beyond the initial period, the restorations were well retained; only one filling was lost in the 12-18 month group. Of the 162 restorations retained, 12 surfaces showed abrasive wear; 11 less than 50 per cent, and 7 more than 50 per cent.

Discussion

Most restorations remained unchanged following placement (Figs. 1 and 2). The patients noted that the thermal/mechanical sensitivity disappeared immediately. The restorations were placed quickly, often multiple surfaces with each mix and with minimal discomfort (some patients' teeth were sensitive to air drying before placement). Care was required in finishing the restorations due to the two-stage nature of the setting reaction of the cement: initial gel hardening occurs with crosslinking with Ca^{++} ions; additional hardening comes at a slower rate with crosslinking activity of the aluminum ions.⁶

Two major factors appeared to influence the success or failure of the material. One was whether the patient changed his brushing habits to prevent continued damage to his teeth. If he persisted in scrubbing with a hard brush instead of a multi-tufted medium-soft brush which he was given, continued wear and/or loss was seen.

The second factor was the depth of the erosion or surface area of the defect. If the restoration was placed in a very shallow depression of less than 1 mm, retention was not as successful as in deeper restorations. In this study, ten such shallow lesions were involved. They had originally been restored along with adjacent teeth in one quadrant; the larger restorations remained intact and the tiny shallow ones were lost.

The cement showed good resistance to abrasive stress. In one heavy brusher, the root continued to wear, eventually leaving the restoration above the worn surface. In others, the restoration gradually abraded but the cement-tooth interface usually remained intact and bits of cement could often be seen clinging tenaciously to the tooth root. Operator variation was apparent in the results: of the restorations lost, five which were replaced were successfully retained. Although not used in this study, it is possible the use of a rubber dam would further limit clinical variables such as moisture contamination during placement.

One criticism of the material is a lack of colour compatibility with the darker tooth root surface, but the conservation of tooth substance and the fact that restorations can be done without the need for local anaesthetic, plus the ease of placement, compensate for this shortcoming in most instances.

Continued on page 62

EFFECT OF INDIUM ON RESIDUAL MERCURY CONTENT AND COMPRESSIVE STRENGTH OF AMALGAM

W. V. Youdelis, PhD
Windsor, Ont.

The effect of indium on the residual mercury, compressive strength, and setting rate of amalgam is investigated. Indium is incorporated into the amalgam by admixing indium powder to dental alloy powder to form a powder composite. The addition of indium reduces substantially the amount of mercury required for amalgamation of the dental alloy powder. The compressive strength of the amalgam increases significantly with indium content, reaching a maximum at about 10 per cent indium in the powder composite. The setting rate of the amalgam decreases with increasing indium content.

It has been well established that the mechanical properties of dental amalgam deteriorate as the residual mercury content increases. For example, Mahler and Eysden¹ have shown that dynamic creep, static creep, and ADA flow increase while compressive and tensile strengths decrease when the residual mercury content increases from 48 to 53 per cent (all concentrations in wt%). The residual mercury content also significantly affects the tarnish and corrosion resistance of amalgam. A metallographic investigation of amalgam restorations by Mateer and Reitz² has shown that the tin-mercury, γ_2 phase (approximate stoichiometric formula Sn_7Hg) is preferentially corroded, and Ryge et al³ have shown, using x-ray diffraction analysis, that the amount of γ_2 phase formed in amalgam increases with the amount of residual mercury in amalgam (which depends on the amount of mercury used for trituration and the condensation pressure). The preferential corrosion of γ_2 phase reported by Mateer and Reitz is in agreement with the results of an electrochemical investigation by Sarkar and Greener,⁴ which show that the γ_2 phase has the highest electrode (dissolution) potential relative to the other phases in amalgam. It is evident from the above that a low residual mercury content in amalgam restorations is desirable, and this requires that the least amount of mercury possible be used for trituration.

In preparing the amalgam restoration, the amount of mercury used for trituration is generally just sufficient to provide the required plasticity for good condensation or packing of the amalgam in the cavity. For most commercial dental alloys, the mercury to alloy (weight) ratios recom-

mended are in the range 1/1 to 1.6/1. A consideration of possible alloy additions to amalgam which may impart good plasticity at low mercury levels suggests indium, since it is known to significantly increase the wettability of metals.⁵ Indium has several other properties and effects that suggest its addition to alloys may be beneficial. It is relatively soluble in mercury and the other major alloying components of dental amalgam, as is evident from the various binary alloy phase diagrams, and thus the possibility of solution hardening of amalgam by indium exists. Several investigators have reported that indium inhibits or retards corrosion and tarnishing of silver and silver alloys, and a number of patents have been issued on this claim (ref 5, p. 208). Also, there have been several extensive toxicity studies, including the implantation of metallic discs of indium in rabbits, which showed no discernible local or general effects (ref 5, p 16). This investigation was undertaken to determine the effect of indium on the residual mercury, compressive strength, and the setting rate of amalgam.

Testing procedures

A standard type dental alloy powder (supplied by Western Metallurgical Ltd., Edmonton, Alberta) was used in this investigation. It is essentially a silver/tin alloy in the approximate (weight) ratio of 3/1 and also contains a relatively small amount of copper and zinc. From a preliminary investigation, it was established that the most effective and expedient means of incorporating indium into the amalgam, to give maximum plasticity with minimum mercury use, is by admixing indium powder (-325 mesh particle size) to the dental alloy powder to form a powder composite. Amalgam specimens, 4 mm diameter $\times$ 8 mm, were prepared by placing the requisite amounts of mercury and composite powder in a capsule containing a cylindrical pestle, tritulating with a Silimat amalgamator for 10 seconds, and condensing the amalgam in a cylindrical mould at a pressure of 68.94 MPa (10,000 psi) for one minute. A Hounsfield Tensometer was used to condense the amalgam specimens and to determine the compressive strength for a strain rate of 0.020 cm/min. The residual mercury and indium contents were determined spectrographically (performed by Detroit Testing Laboratory, Inc., Detroit, Michigan) from

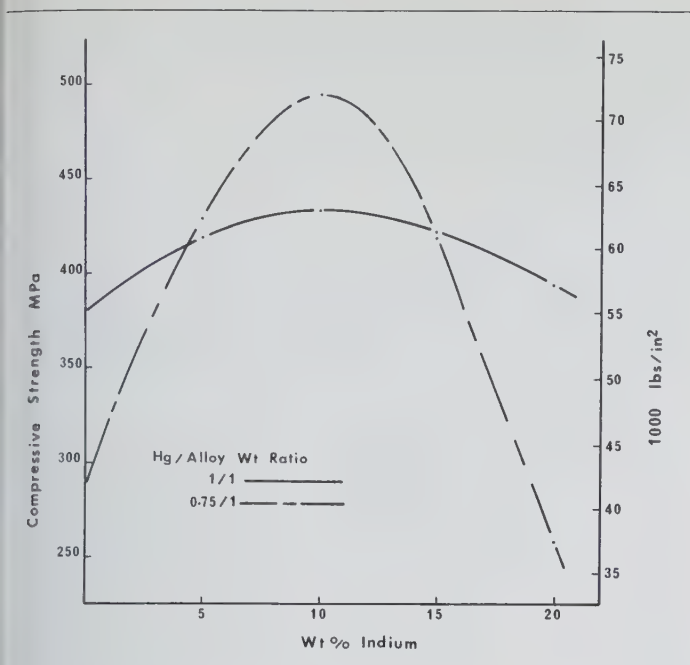


Fig 1 Twenty-four hour compressive strength vs. indium content. Condensation pressure 68.94 MPa (10,000 psi).

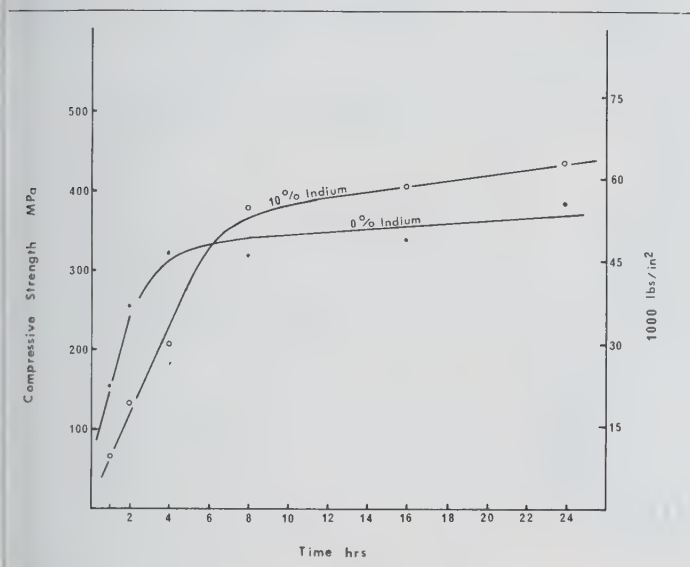


Fig 2 Compressive strength vs. setting time. Mercury/alloy trituration ratio 1/1, condensation pressure 68.94 MPa (10,000 psi).

Residual mercury and indium contents of amalgams condensed at 68.94 MPa (10,000 psi)

Table 1

Amalgam specimen	Powder composite (% indium)	Mercury/alloy (weight ratio)	Residual (%)	
			Hg	In
1	0	1.6/1	36.9	
2	0	1/1	34.2	
3	5	0.75/1	31.5	3.1
4	10	1/1	29.1	3.1
5	10	0.75/1	26.9	4.4
6	10	0.50/1	26.7	4.9

specimens prepared under the same trituration and condensation conditions as the tensile test specimens.

Results and discussion

The 24 hour compressive strength of the amalgam as a function of indium content in the powder composite is shown in Figure 1 for the mercury/alloy trituration ratios of 1/1 and 0.75/1. Each point on the curves represents the average of at least three tests for which the standard deviation is approximately ± 1.5 per cent and ± 2.5 per cent for the 1/1 and 0.75/1 curves respectively. The compressive strength of the amalgam increases with indium content in the dental alloy-indium powder composite, reaching a maximum at about 10 per cent indium for both the 1/1 and 0.75/1 mercury/alloy trituration ratios, viz., 432 MPa (62,850 psi) and 496 MPa (72,000 psi) respectively. The corresponding strengths for the above amalgams containing no indium are, respectively, 381 MPa (55,300 psi) and 258 MPa (37,400 psi).

In general, it was found that the higher the indium content, the greater the plasticity and ease of condensation of the amalgam for a given mercury level. Thus for an indium level of 10 per cent in the powder composite, a 0.75/1 mercury/alloy ratio gave a mix of adequate plasticity and condensed or packed well in the mould; whereas the 5 per cent indium powder composite was relatively dry for the same mercury/alloy ratio and packed poorly in the mould on condensation. The low strengths of the amalgams prepared from powder composite having less than 10 per cent indium and tritured using a 0.75/1 mercury/alloy ratio, as well as the higher scatter in the results (± 2.5 per cent standard deviation) is due largely to their relative dryness and poor packing on condensation.

The setting time for the amalgam was found to increase with indium content. This is illustrated in Figure 2, which shows the compressive strength vs. time curves for the amalgams prepared from the 0 per cent and 10 per cent indium powder composites, using a 1/1 mercury/alloy ratio for trituration. Each point is the average of at least four tests, and the standard deviation of all the points fall in the range ± 0.5 to ± 2.0 per cent. The compressive strength of the 10 per cent indium amalgam requires approximately six hours before it reaches (and then surpasses) the strength of the amalgam containing no indium.

The residual mercury and indium contents of the condensed amalgams for various indium levels of the powder composites and mercury/alloy ratios used for trituration are given in Table 1. In general, the residual mercury content of the amalgam decreases with decreasing mercury/alloy ratios used for trituration as expected. However, amalgam No. 4, which has a 1/1 vs. a 0.75/1 mercury/alloy ratio compared to amalgam No. 3, nevertheless shows a lower residual mercury content, viz. 29.1 vs. 31.5 per cent. This can be attributed to the relatively more plastic mix of No. 4 compared to No. 3, which is imparted by the higher indium content, resulting in considerably more mercury being expressed from the amalgam during condensation in the

mould. Amalgams prepared using 0.5/1 mercury/alloy ratios for trituration are relatively dry for all indium levels and little or no mercury is expressed on condensation.

The increase in strength of the amalgam with increase in indium content may be attributed principally to the decrease in residual mercury content, and therefore γ_2 phase as shown by Ryge et al.³ For the particular dental alloy and preparation conditions used in this investigation, the optimum indium content (based on the 24 hour compressive) and mercury/alloy ratio for trituration are 10 per cent and 0.75/1 respectively, which give residual mercury and indium contents of 26.9 and 4.4 per cent respectively. However, it is to be expected that the optimum indium content and mercury/alloy ratio for trituration will depend on the type of dental alloy powder used (e.g. composition, particle size) and trituration and condensation conditions (i.e. energy input and pressure). The observed increase in setting time with indium content may be the result of a decreased surface reaction rate in the formation of the product phases, and/or a decreased interdiffusion rate due to indium replacing mercury in the amalgam phases. The decrease in 24 hour strength of the amalgam with increase in indium content in the powder composite above 10 per cent is due in part to the slower setting rate, which is evident from the significantly larger positive slope of the compressive strength vs. time curve for the 10 per cent indium amalgam compared to the 0 per cent indium amalgam. Also, at higher indium levels, the amount of indium-tin phase, which has a hexagonal crystal structure similar to γ_2 , will increase, which may tend to decrease the strength of the amalgam. An x-ray diffraction investigation of the indium amalgam is now in progress to determine the effect of indium on the various amalgam phases.

Conclusions

The effect of indium on dental amalgam has been investi-

gated. Indium powder was admixed to the dental alloy powder to form a powder composite, which was then triturated with mercury to form the amalgam. Indium significantly decreases the amount of mercury required for amalgamation while maintaining adequate amalgam plasticity for condensation, which correspondingly reduces the amount of residual mercury in the final amalgam. The increase in the 24 hour compressive strength of the amalgam with indium, maximizing at about 10 per cent indium in the powder composite, is attributed to the decrease in the residual mercury level of the amalgam. The combination of 10 per cent indium in the powder composite and a mercury/alloy trituration ratio of 0.75/1 gives the highest strength, i.e. 496 MPa (72,000 psi) vs. about 381 MPa (55,300 psi) for an amalgam containing no indium and triturated using a 1/1 mercury/alloy ratio, for which the corresponding residual mercury levels are 26.9 and 34.2 per cent, respectively. However, indium decreases the setting rate, which is reflected in the lower early strength of the amalgam.

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Dr. Youdelis is professor and head, Department of Engineering Materials, University of Windsor, Windsor, Ontario N9B 3P4.

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Glass ionomer restorations . . .

Continued from page 59

Conclusion

In this clinical study, 175 restorations were placed in cervical abrasion defects of 40 patients. The patients were recalled and the restorations were photographed and clinically assessed for retention and wear. Of the 13 fillings which were lost, 10 were very shallow (less than 1 mm). It is apparent that the greater surface area of larger defects improves the retentive qualities of the restoration.

When repairing cervical defects, it is important to impress on the patient that proper brushing technique will prevent continuing damage to the teeth and restorations. Despite adverse conditions, the glass ionomer cement ASPA remained bonded to the tooth surface in the absence of deliberate mechanical undercuts or preparation of the surface other than thorough cleaning, and was successfully retained in over 90 per cent of cases (162 of 175).

Dr. Lawrence is an associate in dentistry at the University of Toronto, and engaged in private practice at 3042 Yonge Street, Toronto, Ont. M4N 2K4.

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EFFECT OF INDIUM ON DISPERSION-TYPE AMALGAM

W. V. Youdelis, PhD
Windsor, Ont.

The effect of indium on the compressive strength, flow, and residual mercury content of dispersion-type amalgam is investigated. Indium powder and eutectic silver-copper alloy (dispersion phase) powder are admixed to conventional-type dental alloy powder to form a powder composite. The combination of 42 per cent dispersion phase powder, 10 per cent indium powder, and the remainder conventional-type dental alloy powder, triturated using a 0.75/1 mercury alloy ratio, exhibited good early (one hour) strength and an exceptionally high 24 hour strength (567 MPa: 82,200 psi) for the amalgam.

In another article¹ the author reported on the effect of indium on residual mercury content and compressive strength of conventional-type amalgam. A "conventional-type" amalgam denotes an amalgam prepared from a powder of a "conventional-type" dental alloy, which is essentially the silver-tin compound $\text{Ag}_3\text{Sn}(\gamma)$, but also contains some zinc (up to 2 per cent) and copper (up to 5 per cent). The indium was incorporated by admixing indium powder to the conventional-type dental alloy powder to form a powder composite, which was then triturated with mercury in the usual manner. It was shown that the addition of about 10 per cent (all concentrations in wt%) indium powder to the dental alloy powder decreases substantially the residual mercury content of the resulting amalgam and correspondingly increases the 24 hour compressive strength. However, a disadvantage resulting from the indium addition is an increase in the setting time, manifested by the decrease in the one hour compressive strength of the amalgam.

This investigation was undertaken to determine the effects of indium on dispersion-type amalgam. A "dispersion-type" amalgam denotes an amalgam prepared from a "dispersion-type" dental alloy powder, which is a powder composite comprised of conventional-type dental alloy powder and various amounts of dispersion phase, the latter being an eutectic silver-copper alloy (72%Ag-28%Cu) powder (-400 mesh particle size). The dispersion-type

dental alloy powder and amalgam is described in detail in an earlier publication by the author.² The silver-copper alloy particles remain essentially intact as a dispersion phase in the amalgam matrix, imparting high compressive strength and flow resistance to the amalgam.

Testing procedures

The method of incorporating indium into the dispersion-type amalgam is similar to that used in the other study of conventional-type amalgam containing indium,¹ i.e., indium powder (-325 mesh particle size) and eutectic silver-copper alloy (dispersion phase) powder is admixed to conventional-type dental alloy powder to form the powder composite. Amalgam specimens, 4 mm dia $\times$ 8 mm, were prepared by triturating requisite amounts of mercury and the powder composite using a Silimat amalgamator. No pestle was used and the trituration period was 12.5 seconds for all specimens. Following trituration, the amalgam was condensed in a cylindrical mold at a pressure of 68.94 MPa (10,000 psi) for 1 minute. A Hounsfield Tensometer was used to determine the compressive strength for a strain rate of 0.020 cm/min. The flow was determined according to American Dental Association specification 4.3.3, i.e., at a temperature of 37°C and a pressure of 10.25 MPa (1500 psi) applied for 21 hours after an initial load-free setting period of 3 hours. The residual mercury and indium contents were determined spectrographically (performed by Detroit Testing Laboratory, Inc., Detroit, Michigan) from specimens prepared under the same trituration and condensation conditions as used for the compressive strength specimens.

Results and discussion

The 1 hour and 24 hour compressive strengths of the amalgam specimens prepared from powder composite containing 10 per cent indium powder and varying amounts of dispersion phase powder admixed to conventional-type dental alloy powder are given in Figure 1. The maximum strength occurs at about 42 per cent dispersion phase in the powder composite for both 1 hour and 24 hour strength tests. Figure 2 shows the 1 hour strength of the amalgam

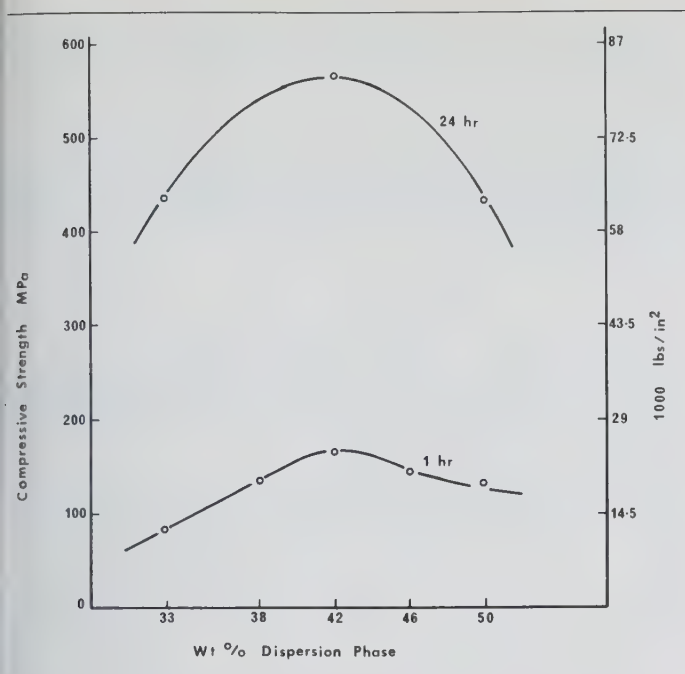


Fig 1 Compressive strength of amalgam vs. dispersion phase content of powder composite containing 10 per cent indium. Condensation pressure 68.94 MPa (10,000 psi). Mercury/alloy trituration ratio, 0.75/1.

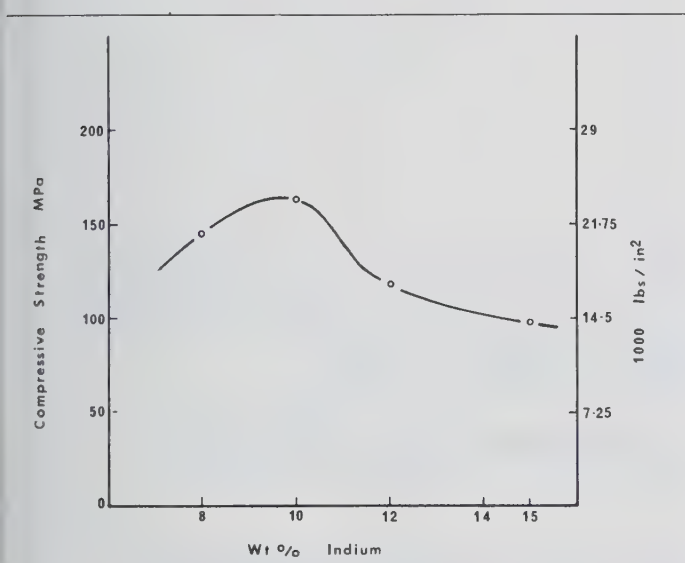


Fig 2 One hour compressive strength of amalgam vs. indium content of powder composite containing 42 per cent dispersion phase. Condensation pressure 68.94 MPa (10,000 psi). Mercury/alloy trituration ratio, 0.75/1.

Residual mercury and indium contents, and 21 hour flow Table 1 of amalgams. Condensation pressure 68.94 MPa (10,000 psi). (D.P. — Dispersion phase).

Amalgam specimen	Powder composite %DP	%In	Hg/Alloy wt ratio	Residual %Hg	%In	Flow %
1	33	0	1/1	37.0	—	0.37
2	33	10	1/1	26.0	3.0	0.90
3	33	10	0.75/1	32.1	4.9	0.70
4	42	10	0.75/1	30.6	4.8	0.40
5	50	10	0.75/1	32.8	4.3	0.37

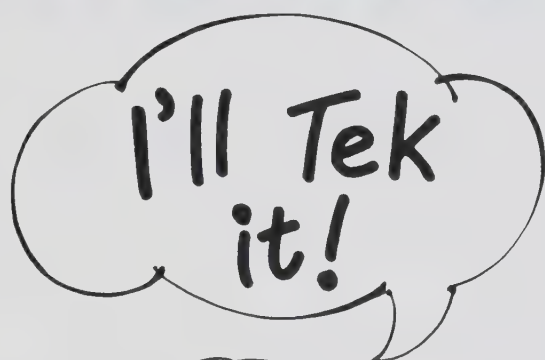
specimens prepared from powder composite containing 42 per cent dispersion phase powder and varying amounts of indium powder. Each point in the figures represents average values of at least three tests with the standard deviations in the range of 2-4 per cent. From Figures 1 and 2 it is evident that the optimum amounts of dispersion phase and indium powders in the powder composite are about 42 and 10 per cent, respectively (using a mercury/alloy trituration ratio of 0.75/1), giving 1 hour and 24 hour compressive strengths of 162 MPa (23,500 psi) and 567 MPa (82,200 psi) respectively. The high 1 hour strength is particularly significant, since it is comparable to the 1 hour strength of conventional-type amalgam without indium (Youdelis,¹ Fig 2). The low 1 hour strength of conventional-type amalgam containing indium reported earlier¹ was attributed to indium retarding the rate of formation of the various amalgam phases, and this effect appears to have been counteracted by the presence of about 42 per cent eutectic silver-copper alloy dispersion phase in the powder composite.

The residual mercury and indium contents, and the 21 hour flow values for several amalgams are given in Table 1. The residual mercury and indium levels remain essentially constant as the amount of dispersion phase in the powder composite is increased from 33 to 50 per cent (for the mercury/alloy trituration ratio of 0.75/1). Although specimen No. 2 was trituated using a higher mercury/alloy ratio than specimens Nos. 3, 4 and 5 (1/1 vs. 0.75/1 respectively), it contains less residual mercury. This may be attributed to the relatively high plasticity of No. 2 compared to Nos. 3, 4 and 5, resulting in a greater amount of mercury and indium being expressed during condensation in the mould. The 21 hour flow decreases with increasing amount of dispersion phase, as shown in Table 1. The flow of 0.40 per cent for the amalgam prepared from the powder composite containing 10 per cent indium powder and 42 per cent dispersion phase powder, remainder conventional-type dental alloy powder, is consistent with the high 1 hour strength obtained for the same amalgam, and is comparable to the flow for the dispersion-type amalgam with no indium (specimen No. 1). An X-ray investigation of dispersion-type amalgam is now in progress to determine the effect of indium on the amounts and rates of formation of the amalgam phases.

Conclusions

The effect of indium on dispersion-type amalgam has been investigated. Indium powder and eutectic silver-copper alloy powder was admixed in varying amounts with conventional type dental alloy powder to form a powder composite, and then trituated with mercury to form the amalgam. The effect of indium decreases substantially the amount of mercury required to form a plastic amalgam, and also correspondingly decreases the residual mercury level in the amalgam. The addition of indium decreases the setting rate of the dispersion-type amalgam for lower dispersion phase contents. However, the combination of 42 per cent dispersion phase powder, 10 per cent indium powder, and

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the remainder conventional-type dental alloy powder, when triturated using a 0.75/1 mercury to alloy ratio, exhibited 1 hour strength and 21 hour flow values that are comparable to those for conventional-type and dispersion-type amalgams containing no indium; and, moreover this amalgam developed the exceptionally high 24 hour strength of 567 MPa (82,200 psi).

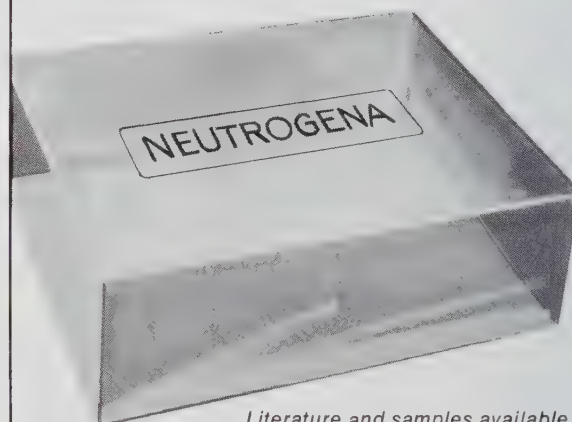
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Dr. Youdelis is professor and head, Department of Engineering Materials, University of Windsor, Windsor, Ontario N9B 3P4.

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PULP IRRITATION AND SILICATE CEMENT

G. S. Beagrie, DDS, FDS, RCS (Edin), FRCD (C), FICD
Vancouver

A recent review¹ outlines the historic development of dental cements and discusses their properties for use in restorative dentistry. Pulp reactions to the placing of cements in prepared cavities constitutes a Standard American Dental Association test* for these materials. It has been shown that polycarboxylate cement is well tolerated by the dental pulp^{2,3} and even by cells in culture⁴. Zinc phosphate cements, unlike polycarboxylates, are claimed to cause pulpal irritation⁵. According to Smith¹ this is due to free phosphoric acid in the mix. Other studies claimed that zinc phosphate cement is non-irritating even in deep cavities⁶. In these studies researchers suggested that the pulp reaction was due to retained debris in the cavity and bacterial growth under the cement. Other work⁷ supports this. A similar claim for silicate cement was made⁸. Since it has long been considered that the pH of silicate cements was responsible for pulpal irritation⁹⁻¹⁹ it was felt necessary to carry out further investigations.

The hypothesis extended in the previous study⁸ was that the bacterial growth under the silicate cement was the causative factor in the same manner suggested for zinc phosphate cement.⁶ However, if this hypothesis is to be accepted the following question must be addressed. Can bacteria grow in contact with and within the acidic milieu which occurs when new mixes of silicate and zinc phosphate cements are placed into a cavity?

In order to investigate the phenomenon further, the present study was designed through which a comparative assessment could be made of the bacteriocidal qualities of silicate, zinc phosphate and polycarboxylate cement materials as well as their adaptability to the dentinal walls of prepared tooth cavities.

Materials and methods

1. Bacteriocidal properties of materials

Five organisms known to be associated with the carious process were selected to test the inhibitory properties of the selected materials. The organisms were as follows:

- a) *Lactobacillus* B4961 †
- b) *Streptococcus mutans* LM-7 ‡
- c) *Enterococcus* E-1 §
- d) *Candida albicans* ||
- e) *Sanguis* ¶

Each was plated out on blood agar plates under standard laboratory procedures. Cylinders of the material to be tested were prepared according to manufacturers' instructions and thereafter placed into stainless steel moulds until set. The cylinders were 6 mm × 3 mm in length and diameter. On removal, each cylinder was sterilized in an ethylene dioxide chamber for 24 hours, degassed for three days then placed in "seeded" blood agar plates to determine the ability of the material to inhibit growth of the selected bacteria. Five cylinders of polycarboxylate cement, silicate cement and zinc phosphate cement were thus tested. Incubation of specimens with the selected bacteria, was carried out at 37°C and 4°C. Inhibition of growth was recorded according to the diameter size of the clear zone seen around the specimen. This was expressed in millimetres. Using filter paper discs soaked in their respective mixing liquids, tests were also made of the polycarboxylate, zinc phosphate and silicate cements. Portions of the freshly mixed materials in the time interval immediately after the powders had been incorporated were also evaluated. For this latter test a small "well" of approximately the same size was made in the agar into which an equivalent quantity of the newly mixed material was added. Five specimens of each cement were so tested. Inhibition of bacterial growth was again expressed as a diameter measurement of the clear zone of inhibition around the specimen.

2. Adaptability of materials to tooth dentine

To determine the adaptability of the test materials dentine discs of freshly extracted molar teeth were prepared. Each disc was approximately 3 mm thick. Cavities were then cut with a high speed 34 inverted cone bur with copious air and water spray to simulate cavity preparation under clinical operative conditions. Two cavities were cut in each disc, each to a depth of approximately 2 mm. Cavities were then washed for one minute with water and air dried for one

* Toxicity Tests on Dental Materials — Guide to Dental Materials and Devices, American Dental Association, Chicago

† Culture — Dr. R. P. Ellen, Faculty of Dentistry, University of Toronto
from sub-culture — Dr. B. F. Hammond, University of Pennsylvania

‡ Culture — Faculty of Dentistry, University of Toronto

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Culture — Faculty of Dentistry, University of Toronto

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further minute. The cavities were filled with test materials after mixing each according to manufacturers' instructions. The materials, after being placed in the cavities, were covered with a glass slide and allowed to set under a 5 gram weight pressure. Twenty-four hours later the dentine discs were fractured in a line through the materials to provide a clear view of the dentine material interface. These fractured specimens were air dried, coated with gold and subjected to scanning electron microscopic examination.

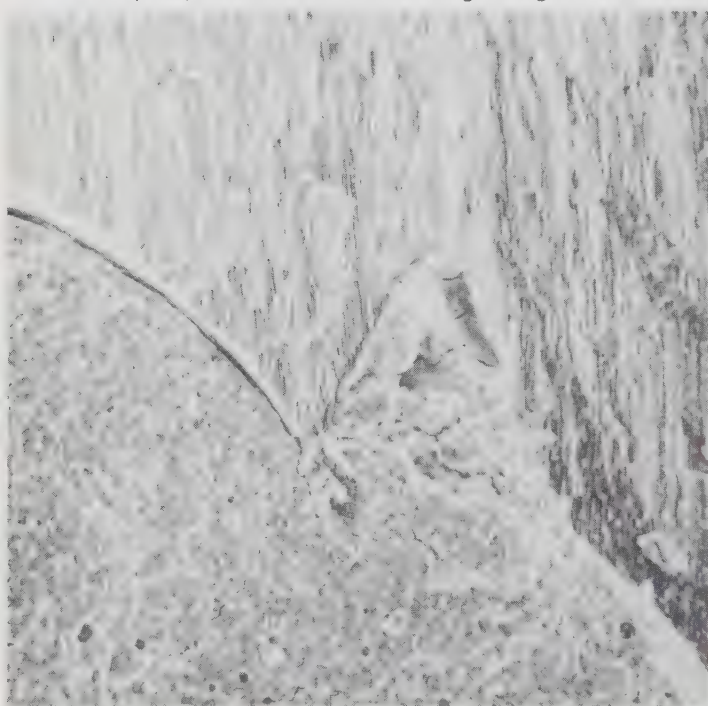
Results

The assessment of bacteriocidal properties is best expressed in Table 1. Inhibition zones can be recognized associated with the polycarboxylate cements for strep mutans, lactobacilli and sanguis organisms. Zinc phosphate cement produced a slight zone of inhibition with strep mutans organisms but not with any others tested. Silicate cement showed no bacteriocidal properties for any of the five test bacteria.

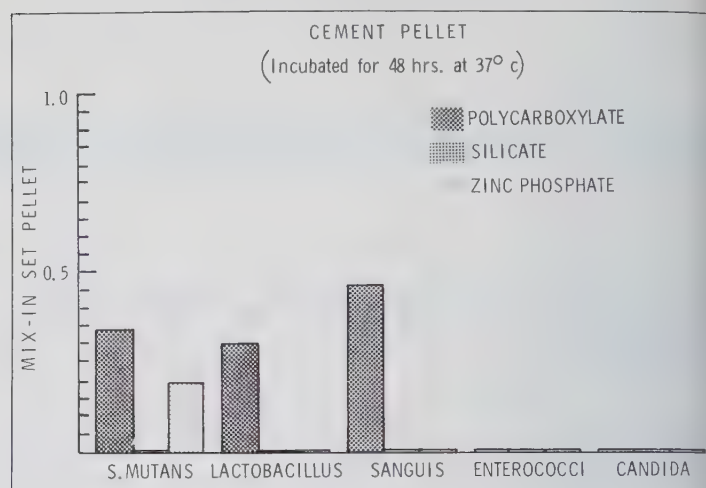
The tests using polycarboxylate, silicate and zinc phosphate cement liquids by contrast demonstrate definitive stasis of bacterial growth in all bacteria tested with the exception of candida albicans. The zone size varied with the liquid and the bacterium under test. The results are shown in Table 2 where it can be seen that the zinc phosphate cement liquid was the most effective. Newly mixed materials demonstrated a pattern of activity similar to the cylinders of set materials.

In considering the adaptability of materials to dentine, the split specimens yielded some interesting results when comparing one interface to another. Excellent adaptability to the dentinal wall was demonstrated by oxyphosphate cement (Fig. 1).

Fig 1 Scanning electron micrograph. Split specimen showing the dentine zinc phosphate cement interface. Orig. 1 mcg $\times$ 210.



Histogram demonstrating the growth inhibition effects of the three test cements on five known bacteria Table 1



Histogram showing average zone of bacterial growth inhibition from the three test cement liquids Table 2

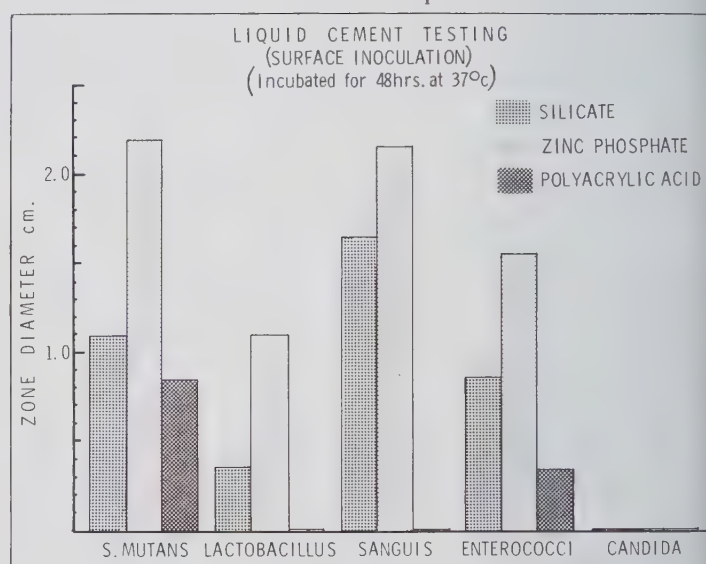


Fig 2 Split specimen of cavity filled with polycarboxylate cement. S.E.M. orig. mag. $\times$ 60.



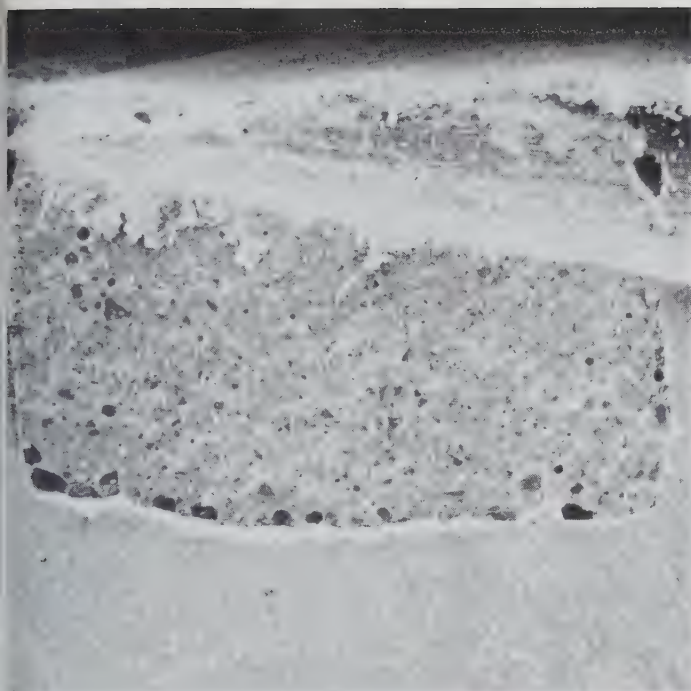


Fig 3 Silicate filled cavity with large spaces evident at the dentine silicate interface. S.E.M. orig. mag. $\times 128$.

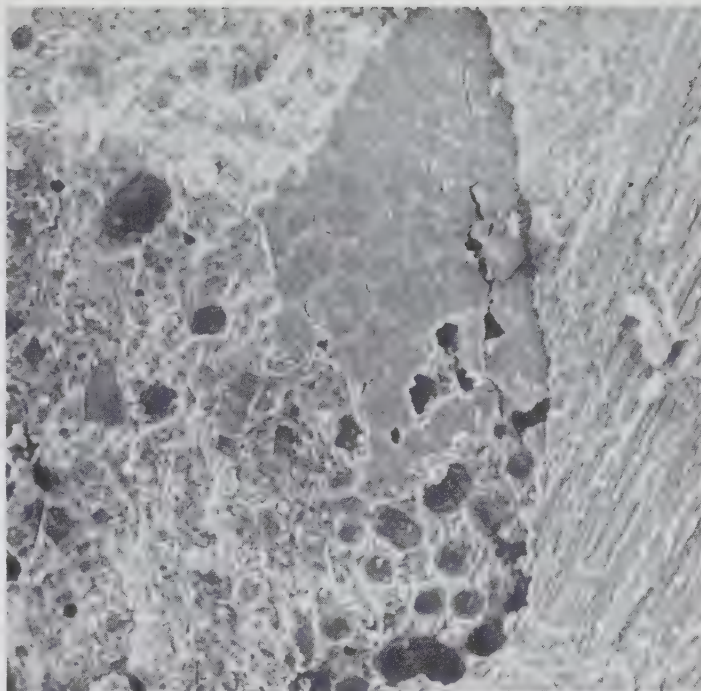


Fig 4 Scanning electron micrograph of silicate filled experimental cavity. Orig. mag. $\times 128$.

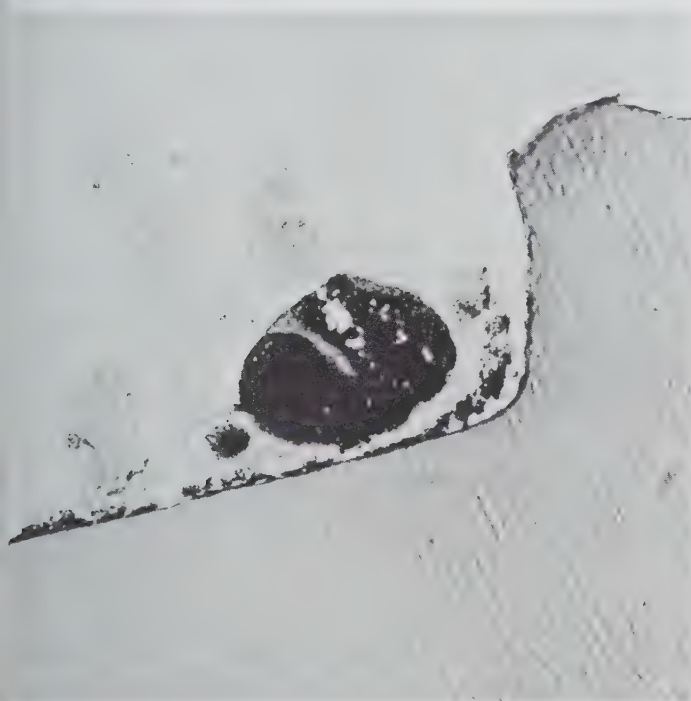


Fig 5a Histological section of experimental working tooth stained by the Brown method ($\times 880$). Silicate cement particle can be seen surrounding a large bacterial clump approximately 150 microns in diameter. (Reprint Beagrie and Brännström, 1977, by permission of the editor, Canadian Dental Journal.)

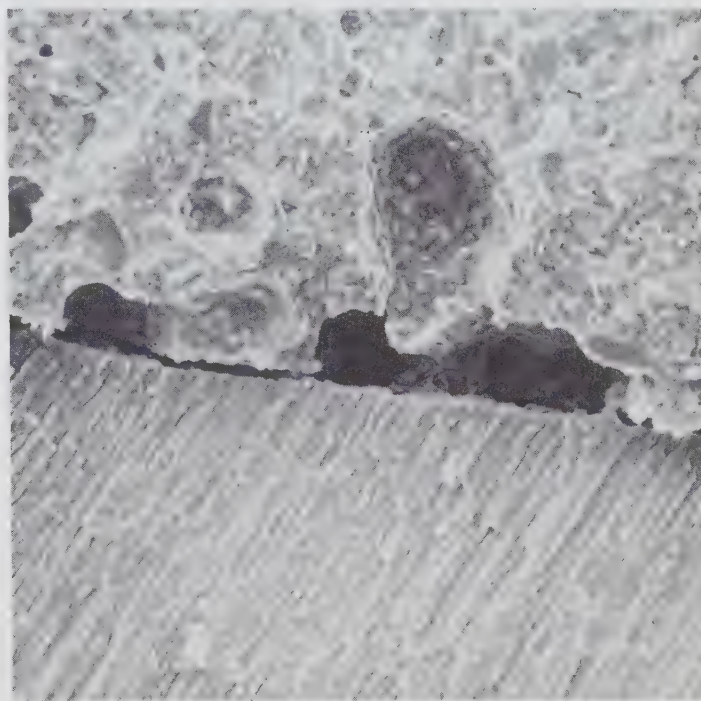


Fig 5b Scanning electron micrograph of silicate dentine interface. Magnified space size measures 150 microns. Cf. Fig 5a. Orig. mag. $\times 250$.

Polycarboxylate cement (Fig. 2) showed a large number of air spaces in the body of the cement but there was a consistent uninterrupted layer at the dentine interface. Silicate cement (Fig. 3) had a similar spatial relationship in the core of the material. However, in almost all specimens a large number of voids at the dentinal material interface were evident. This architecture was apparently the result of a "honeycomb" formation on the cavity floor as well as on the walls (Fig. 4).

Discussion

The finding of large spaces in silicate cement at the floor of cavities and on the walls was of great interest since it related fundamentally to the study reported by Beagrie and Brännström (1977).⁸ Closer examination of the data of that experiment showed that in the teeth where pulpal inflammation was demonstrated, the large "clumps" of bacteria seen measured one hundred and fifty microns (Fig. 5a). This size corresponded almost exactly to the spaces found in the

silicate cement (Fig. 5b). This being the case and with the added knowledge that silicate cement in this reported study has only minute bacteriocidal qualities to the five organisms tested it would seem reasonable to postulate that:

- i) bacteria left in a tooth cavity filled with silicate cement will not be inhibited by the cement placed;
- ii) such bacteria will have an adequate number of spaces between the dentine wall and the silicate cement into which they can proliferate using dentinal fluid as a source of nutrient;
- iii) the bacterial toxic products and the bacteria themselves can and will irritate the tooth pulp and cause inflammation.

Pulpal inflammation and even necrosis in teeth filled with silicate cement has long been investigated. It is suggested from this present investigation that the cause of pulpal inflammation is the presence of bacteria in the cavity at the time of placement of the silicate cement. Since the cement is non-bacteriocidal and provides large spaces at the dentine material interface these bacteria can grow and cause subsequent pulpal damage.

In a scanning electron microscopic study²⁰ in which the space was measured between fillings and cavity walls, silicate was used as a control material. It is interesting to note that in this paper the authors commented that for the silicate material "bubbles near the floor of the cavity made it difficult to measure the space width". These "bubbles" were consistently found in the present study and are well illustrated in figure 4.

Zinc phosphate cement by contrast, although non-bacteriocidal in itself, would appear to prevent pulpal damage by its excellent adaptability to the dentine of the cavity. This is well supported in a recent clinical study²¹ in which inlays were placed with oxyphosphate cement in very deep cavities with no demonstrable effects on the pulp.

Zinc polycarboxylate cement has the property to chelate to the calcium of the tooth²². This gives it excellent adaptability to dentine. The dentinal surface, however, must be clean to give optimum results. In addition, since polycarboxylate cement has demonstrable bacteriocidal qualities²³ which makes it even more favourable as a cement lining material.

In view of the results observed in this series of experiments, the polycarboxylate cements are better in interface contact and bacteriocidal effect. However, the fundamental principle of the importance of cavity toilet proposed years ago by G. V. Black also comes into focus.

Dr. Beagrie is Dean, Faculty of Dentistry, University of British Columbia.

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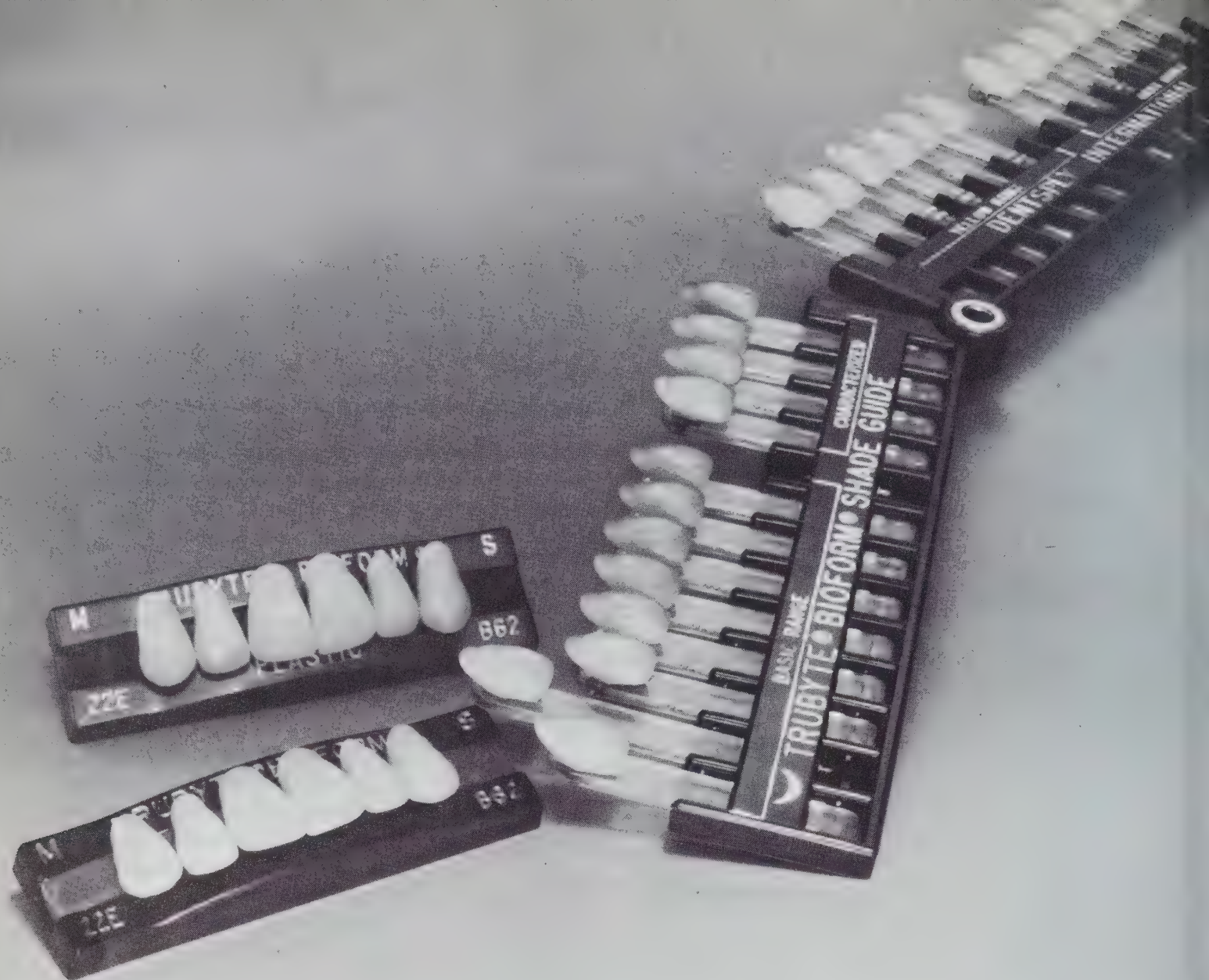
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Le travail du Dr. Nicholson ne se veut pas spécialisé. Il a comme objectif de remémorer au lecteur certaines méthodes de prévention contre les dommages pulpaire qui peuvent survenir pendant les procédures de D.O. et P.P.F. Dans le but de condenser le texte, le Dr. Nicholson vise d'abord à une énumération des données.

INTRODUCTION

La préparation de dents en vue de travaux en P.P.F. comprend de sérieuses considérations préliminaires. D'une part, la cavité buccale n'étant pas un milieu idéal quant à l'accès, la visibilité et le contrôle de la contamination, il faut trouver des moyens d'obtenir un champ opératoire convenable tout en assurant la protection et le confort.

D'autre part, la taille d'une dent peut produire une réaction pulpaire importante. L'utilisation d'une gamme d'instruments et de matériaux requiert une connaissance adéquate de la part de l'opérateur. Il apparaît donc essentiel de réaliser et de comprendre l'aspect préventif qu'on s'efforce d'apporter dans les différentes procédures en P.P.F. ou dans toute autre discipline de la dentisterie de restauration.

LE CHAMP OPÉRATOIRE

Dans la plupart des travaux de dentisterie, il est avantageux d'avoir un champ opératoire sec et propre. Ceci favorise la visibilité pour une bonne perception des formes et des détails, ainsi qu'une meilleure détection des lésions ou autres imperfections. Ces conditions de travail permettent en plus de profiter des propriétés maximales des matériaux obturateurs ou des ciments tout en préservant les tissus contre la contamination.

Voici quelques moyens:

1) Les drogues

Le sulfate d'atropine s'avère être la plus efficace (parasympatholytique).

Rôle: suppression des sécrétions salivaires et bronchiques.

Effets secondaires: — dilation pupilles
— paralysie de l'accommodation
— tachycardie
— rétention d'urine, etc.

Contre-indication: Glaucome.

2) Les absorbants

Rouleaux de coton, 2 × 2, etc.

Indication: Pour de courtes périodes de temps, sécheresse absolue non nécessaire.

N.B.: Pas un substitut adéquat à la digue.

3) Les pompes à salive

— prévenir accumulation de salive au niveau du plancher de la bouche.

— en association avec les rouleaux de coton, la digue.

— de préférence en plastique afin d'éviter les hématomes, l'abrasion, etc.

4) Les appareils à succion rapide

— collectent à la fois la salive et les débris.

5) La digue

— tableau sur les avantages: a) pour l'opérateur
b) pour le patient
c) pour le pronostic

LES AVANTAGES DE LA DIGUE

A. pour l'opérateur

1. Meilleur champ opératoire
- visibilité augmentée
- accessibilité augmentée
- propre & sec
- agrandi
- commodité
2. Protection (maladie — halitose)
3. Tension diminuée
4. Economie temps
5. Disponibilité des 2 mains

B. pour le patient

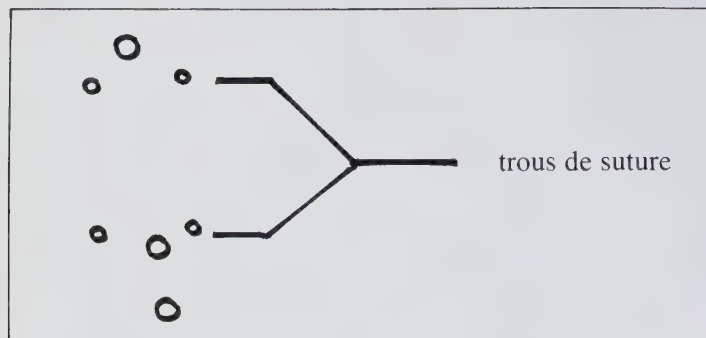
1. Elimination débris
2. Diminution possibilité d'aspiration de débris
3. Protection tissus mous
4. Protection contre saveur désagréable
5. Bouche ouverte
6. Protection gingivale
7. Barrière psychologique

C. pour le pronostic

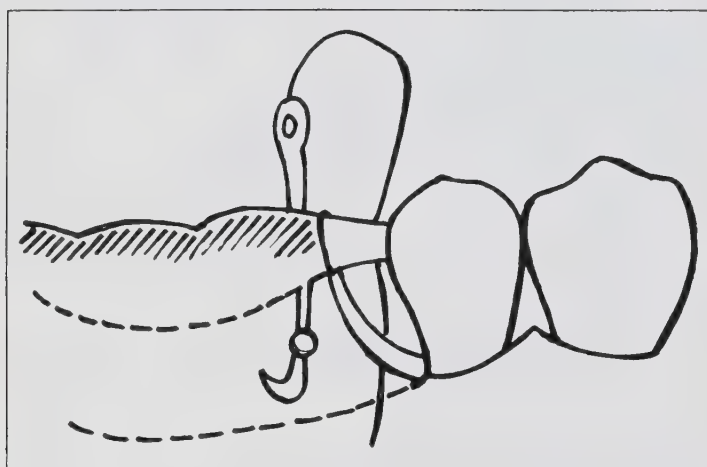
1. Protection pulpaire
2. Protection des matériaux contre la contamination

— usage de la digue:

1. lors taille d'une pile:
 - a) commencer à tailler, mettre la digue après.
 - b) placer la digue du début à la fin.
2. lorsqu'il y a un pont en place.



- poinçonner la digue normalement en faisant un trou pour les piles.
- laisser l'espace du pont.
- près des trous pour les piles, percer un trou de chaque côté du trou pour la pile.
- une fois la digue en place, relier les deux trous au niveau du joint de soudure à l'aide d'une suture.
- passer le fil au niveau du trou de la dent pile.



3. pour cimentation d'un pont, d'une couronne, d'une incrustation
 - propriétés optimales pour le matériau.
- 6) L'usage de crampon en P.P.F.
 - choix de crampons en fonction de la dent.
 - 211, un crampon fréquemment utilisé en P.P.F.
 - avantages du 211 sur le 212
 - a) fort
 - b) ne nécessite pas utilisation de compound
 - c) usage possible de la soie dentaire pour rétraction
 - d) repousse la gencive et la digue.

B. PROTECTION DE LA PULPE

1) Réactions pulpaires suite au fraisage

- haute vitesse → élévation de température.
donc a) refroidissement à l'eau
- b) fraisage intermittent
- c) minimum de pression

2) Profondeur de la cavité (épaisseur de dentine)

— Lors du fraisage d'une dent, on attaque les cellules directement par leurs prolongements cytoplasmiques. L'acuité de cette atteinte est liée:

- a) au tranchant de la lame
- b) vitesse de la taille
- c) pression sur la fraise

— L'épaisseur de dentine recommandée: 2mm.

Dans certains cas, difficile à respecter à cause de l'épaisseur requise pour la porcelaine et l'or.

— aspiration des odontoblastes due soit:

- a) à une augmentation de la pression intrapulpale.
- b) à une traction exercée sur les odontoblastes par leurs prolongements cytoplasmiques suite à l'action du fraisage et/ou au rétrécissement à la suite de la déshydratation.

3) La dessiccation de la dentine

assèchement répété → migration des odontoblastes dans les tubuli dentinaires → apparition de vésicules au niveau de la pulpe (phénomène inflammatoire)
donc, attention à la fréquence et à la durée de l'assèchement.

4) La carie et l'exposition pulpaire

— migration des toxines et des acides à travers les tubuli dentinaires vers la pulpe et ce, avant l'atteinte par les bactéries.

— micro-expositions pulpaires: hydroxide de calcium.

— les coiffages directs sont à surveiller; souvent traitement endodontique est préférable.

5) Matériaux dentaires

a) Nettoyage de la dent pile

boulette de coton imbibée d'eau.

lorsque proximité pulpaire, l'application de prednisolone pendant une minute peut réduire l'inflammation.

b) reconstruction de la dent pilier

— amalgame

— careform: — moins de pression que foulage d'amalgame

— careform: — pas de conduction thermique

c) préparation de temporaires

résine autopolymérisante:

— isolement de la dent (corps gras — salive)

— dégagement de chaleur à contrecarrer en enlevant souvent le temporaire pendant la polymérisation.

d) la prise d'empreinte

caoutchouc ou hydrocolloïde réversible: non traumatiques pour la pulpe.

e) cimentation

ciment à base d'acide phosphorique: irritant
compenser avec deux couches de vernis protecteur.

En cas de doute sur la santé des tissus pulpaires, prolonger la période sous temporaire.

6) La percolation

La diffusion des fluides buccaux entre la dent et la restauration peut entraîner la dissolution des ciments, une sensibilité de la dent, une récurrence de carie et finalement, une pathologie pulpaire.

COUCHE ODONTOBLASTIQUE VS. MATÉRIAUX

DESTRUCTION COUCHE ODONTOBLASTIQUE		légère	modérée	sévère
3 JOURS	ZOE	_____	_____	
	POLYCAR- BOXYLATE	_____	_____	
	CaOH	_____	_____	
	SILICATE	_____	_____	_____
	COMPOSITE	_____	_____	
5 SEMAINES	ZOE	_____	_____	
	POLYCAR- BOXYLATE	_____	_____	
	CaOH	_____	_____	
	SILICATE	_____	_____	_____
	COMPOSITE	_____	_____	_____
8 SEMAINES	ZOE	_____	_____	
	POLYCAR- BOXYLATE	_____	_____	
	CaOH	_____	_____	
	SILICATE	_____	_____	_____
	COMPOSITE	_____	_____	_____

Légende: _____ Pulpe non-exposée
 - - - - - Pulpe exposée

L'occlusion

Un contact prématuré ou trop fort peut occasionner un effritement du ciment et par la suite la percolation. Le délogement d'une couronne est souvent le signe d'un mauvais ajustement au niveau de l'occlusion.

CONCLUSION

A la lumière de ce qui a été discuté dans les pages précédentes, il apparaît évident qu'une foule de facteurs contribuent au succès ou à l'échec des travaux en P.P.F.

L'obtention d'un champ opératoire adéquat est d'une importance capitale pour l'exécution des travaux et ce, dans les meilleures conditions possibles. Quoi de mieux qu'un champ opératoire propre, sec, agrandi, avec une visibilité et une accessibilité augmentées!

Face aux tissus pulpaire, il est bon de se rappeler que les différentes étapes de la restauration peuvent provoquer une réponse pulpaire. Il faut donc minimiser le plus possible

cette dernière de façon à ne pas outrepasser le seuil de résistance pulpaire. Il demeure donc primordial de porter attention aux causes possibles d'irritation de la pulpe comme le fraisage, l'assèchement excessif, les matériaux, etc.

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ONTARIO — Brampton. Dental laboratory space for rent in modern, medical air-conditioned building in the heart of Canada's fastest growing area. Reasonable rent. Phone: (416) 451-5802.

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ONTARIO — Woodstock. Excellent opportunity. For sale: Three year old preventive practice in professional building. New four-handed equipment in stylish professionally decorated office. Very high income. Open concept with room for expansion. Small city, thirty miles from large urban centre. Reply to CDA Box Number 1796.

QUEBEC — Montreal. One or two dental operatories, fully equipped, to occupy and/or share for Fridays, Saturdays, and Sundays if need be. Arrangements to be negotiated on percentage basis re patients and supplies, if so desired. Phone: (514) 342-1742 or 487-3022.

ASSOCIATESHIP AVAILABLE

BRITISH COLUMBIA — Courtenay. Full time associate required with option to buy in. Contact: Dr. Derek Duvall, 556 Fifth Street, Courtenay, B.C. V9N 1K3. Phone: (604) 338-5381 (office) or (604) 339-4272 (residence).

BRITISH COLUMBIA — Vancouver. Experienced associate required for General Anaesthetic practice in central Vancouver. Minimum of five years experience required. Reply to CDA Box Number 1856.

ONTARIO — Toronto. Opportunity available in busy children's practice. Associateship leading to partnership. Please send resume. Reply to CDA Box Number 1849.

ALBERTA — Wetaskiwin. Full time associate required for active practice in the city of Wetaskiwin, population 8,000. Situated 40 miles from Edmonton. Present associate leaving the country for post-graduate studies. Please enclose pertinent particulars. Contact: Dr. F.L. Pierce, 5007 51st Avenue, Wetaskiwin, Alta. T9A 0T9.

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OPPORTUNITIES AVAILABLE

ALBERTA — Bow Island. A dentist is required for the Town of Bow Island, thirty five miles west of Medicine Hat, Alta. on busy Highway Number 3 in south east Alberta. Bow Island is a thriving community of 1,334 persons. There are two resident medical doctors and a newly opened hospital and nursing home. Sixty four thousand irrigable acres surrounding the town, with large expansion project on the drawing boards. Interested parties contact: Fred Mellen, Economic Development Officer, P.O. Box 374, Bow Island, Alta. T0K 0G0.

ALBERTA — Hinton. Excellent opportunity for new graduates. Have an instant patient flow. Three operatories fully equipped, with room for fourth. New professional building in fast growing town. Fourteen miles to Jasper Park and 50 miles to excellent downhill skiing. Phone (403) 397-2294 (evenings).

ALBERTA. Opportunity to establish unopposed practice in a pleasant expanding small town, thirty kms. from Calgary. Space in new professional building available, moderate rental. Hospital privileges can be obtained. Unparalleled recreational facilities. Close to Rocky Mountains, skiing, fishing, etc. If interested write to: Dr. H.C. Renney, Box 473, Crossfield, Alta. T0M 0S0 or phone: (403) 946-5051 (office) or 946-5170.

ALBERTA. Student graduating May 1979, seeks graduating student or established dentist as partner for new dental practice presently being established in rural centre close to Edmonton. Excellent opportunity in presently underserved area. Contact: J.D. Anderson, P.O. Box 4006, Edmonton, Alta. T6E 1V1, or phone: (403) 462-0947 (evenings).

SASKATCHEWAN — Shaunavon. Assistance of up to \$40,000 (written off over 5 years) available for dentist to establish practice in community of 2,500 in South-Western Saskatchewan. Further details available from: Dental Director, Health Region No. 1, 350 Cheadle West, Swift Current, Sask. S9H 1G3, or phone: (306) 773-7425 (collect).

ONTARIO — City of Guelph (population 75,000). Dentist wanted: Golden opportunity, unique situation in a subdivision with only one plaza serving surrounding population of 4,000 growing to 10,000; three schools. No other dentists serving this area near University of Guelph. Contact: Ron Mountford, Canada Trust Realtor, 34 Wyndham Street, Guelph, Ont. Phone: (519) 824-1123 (business) or (519) 836-2261 (residence).

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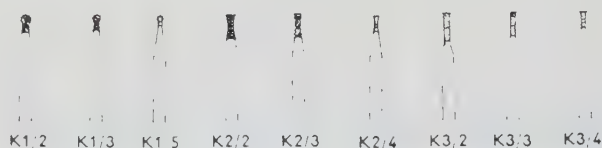
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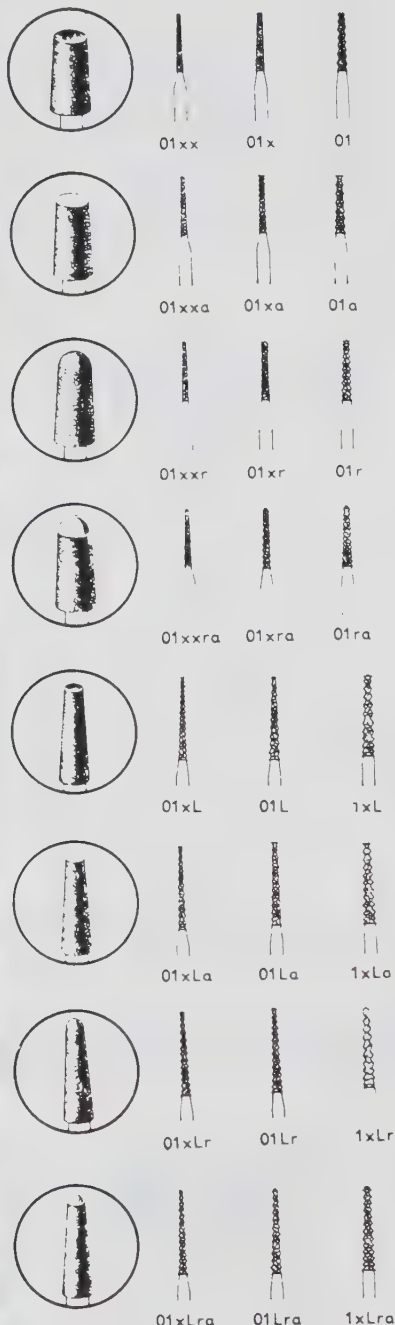
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OPPORTUNITIES WANTED

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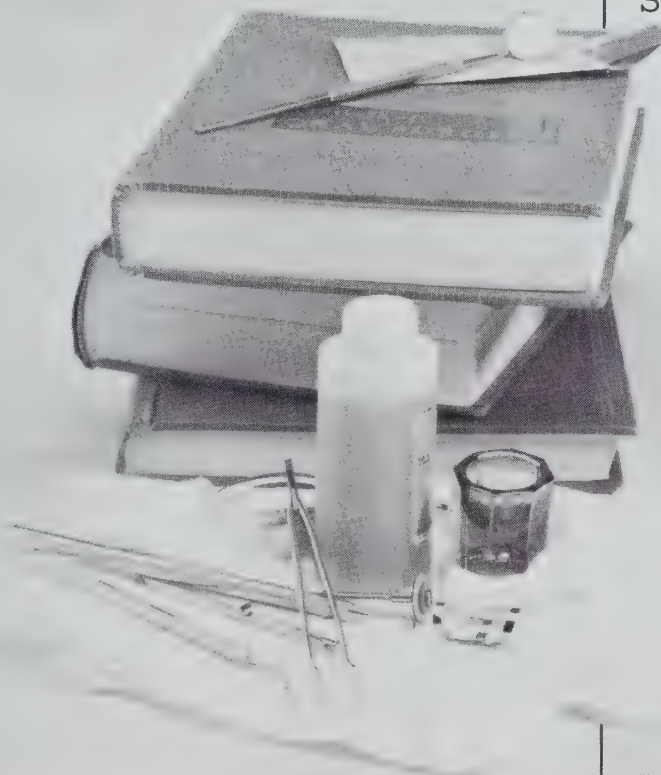
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Announcements/Avis

We urge readers to confirm meeting dates with the contact listed with each announcement.

Canadian Dental Association

1979 National Convention, Quebec City, September 9-12. Contact: Dr. Clément Caron, Convention Chairman, 1979 CDA National Convention, 1575 St. Louis Road, Sillery, Quebec G1S 1G4. Telephone: (418) 527-8969 or 687-5271.

Association Dentaire Canadienne

Congrès national 1979, Québec, 9-12 septembre. Pour renseignements: Dr. Clément Caron, directeur général, congrès 1979 de l'ADC, 1575 Chemin St-Louis, Sillery, Québec G1S 1G4. Téléphone: (418) 527-8969 or 687-5271.

Canadian Meetings

Third Canadian Congress of Dentistry for Children, Vancouver, April 6-8, 1979. Contact: Dr. G.M. Jinks, Suite 301, 1701 West Broadway, Vancouver, British Columbia V6J 1Y3.

Alpha Omega — Mount Royal Dental Society Limited Attendance Course, Montreal, April 27-28, 1979. Speakers: Dr. Howard Skurow, periodontics, prosthetics; Covert Baily, nutrition, physical fitness. Contact: Dr. A. Brenner, 7005 Kildare Road, Suite 11, Cote St. Luc, Quebec H4W 1C1.

Canadian Academy of Periodontology and Ontario Society of Periodontics Meeting, Four Seasons Hotel, Toronto, May 4-5, 1979. Speakers: Dr. A.R. Ten Cate, Dean, Faculty of Dentistry, University of Toronto. Subject: The Periodontium. Dr. Clifford Ochsenbein, Dallas, Texas. Subject: Periodontal Surgical

Procedures. Contact: Dr. Michael Litchen, Suite 302, 3025 Hurontario Street, Mississauga, Ontario L5A 2H1.

Ontario Dental Association, 112th Spring Meeting, Sheraton Centre, Toronto, May 13-16, 1979. Contact: Mrs. W.C. Durham, 234 St. George Street, Toronto, Ontario M5R 2P2.

Les Journées Dentaires du Québec, Queen Elizabeth Hotel, Montreal, May 27-31, 1979. Contact: Dr. Morton R. Lang, 5253 Decarie Blvd., Montreal, Quebec H3W 3C3. Telephone: (514) 481-0397.

British Columbia College of Dental Surgeons 1979 Convention, Hotel Vancouver, June 5-8, 1979. Contact: College of Dental Surgeons of British Columbia, 1125 West Eighth Avenue, Vancouver, British Columbia V6H 3N4.

Alberta Dental Association, Annual Convention, Red Deer, Alberta, June 7-9, 1979. Contact: Dr. Ron Gish, Lacombe, Alberta.

Western Canada Dental Society Convention, Hotel Saskatchewan, Regina, June 7-9, 1979. Contact: Dr. T.E. Donavon, 205 McCallum Hill Building, Regina, Saskatchewan S4P 2G6.

7th International Symposium on Dental Hygiene, Vancouver, British Columbia, July 25-28, 1979. Contact: 7th International Symposium on Dental Hygiene, c/o Venue West Ltd., 1704-1200 Alberni Street, Vancouver, British Columbia V6E 1A6.

Canadian Association of Oral and Maxillofacial Surgeons Annual

Meeting, Quebec City, September 8-11, 1979. The: Maxillofacial Trauma. Contact: Dr. Victor Goodyer, 565 St. Jean, Quebec City, Quebec G1R 1P5.

Canadian Association of Orthodontists, 31st Annual Meeting and Convention, Hotel Frontenac, Quebec City, September 8-9, 1979. Contact: Dr. R. Faith, 605-1538 Sherbrooke Street West, Montreal, Quebec, or Dr. J.J. Schachter, Box 952, Saskatoon, Saskatchewan.

Royal College of Dentists of Canada Meeting, Chateau Frontenac Hotel, Quebec City, September 9-10, 1979. Contact: Dr. C.L.B. LaVelle, Faculty of Dentistry, University of Manitoba, 780 Bannatyne Avenue, Room D 113, Winnipeg, Manitoba R3E 0W3. Telephone: (204) 786-3631.

Canadian Society of Forensic Science Annual Meeting, Ritz Carlton Hotel, Montreal, October 15-19, 1979. Two-day symposium on Dentistry and the Law will be held on the 15th and 16th. Contact: Dr. R.B.J. Dorion, President, Canadian Society of Forensic Science, Suite 710-D, Sun Life Building, Montreal, Quebec H3B 2V6.

International Meetings

International Conference on Oral Implantology, Jerusalem, Israel, April 1-5, 1979. Contact: Conference Travel of Canada Ltd., 11 Adelaide Street West, Suite 903, Toronto, Ontario M5R 1L9.

British Dental Association Annual Conference, Cardiff, Wales, April 5-8, 1979. Contact: British Dental Association, 64 Wimpole Street, London W1M 8AL.

Asian Pacific Dental Federation, 9th Dental Congress, Merlin Hotel, Kuala Lumpur, Malaysia, April 23-27, 1979. Contact: Dr. Lim Chee Shin, P.O. Box 234, Petaling Jaya Selangor, Malaysia.

Irish Dental Association, Annual Scientific Congress, Waterville Lake Hotel, County Kerry, April 25-28, 1979. Contact: Conference Secretary, Irish Dental Association, 29 Kenilworth Square, Dublin 6, Ireland.

Prosthodontic Society of South Africa Second International Congress and Dental Care Exhibition, Durban, South Africa, April 28 - May 5, 1979. Contact: Dr. Helmut Heydt, Private Bag 1, Houghton, Transvaal 2041. Telephone: 642-4687.

International Dental Congress in the Middle East, Damascus, Syria, April 30 - May 2, 1979. Organized by the Syrian and Jordanian Dental Associations with the assistance of the Fédération Dentaire Internationale and

the World Health Organization. Contact: Dr. Hisham Burhani, President, Syrian Dental Association, 29 Aiar Street, Damascus, Syria.

International Symposium on Restorative Dentistry — Current Status and Future Considerations, Jerusalem, Israel, May 3-4, 1979. Speakers: Dr. Frank Celenza, New York University College of Dentistry, and Dr. Raymond Leibowitz, University of Dental Surgery, Paris, France. Co-sponsored by the Hebrew University-Hadassah School of Dental Medicine and the Alpha Omega Fraternity, Toronto Chapter. Contact: Dr. Hart Levin, 2006 Bathurst Street, Toronto, Ontario M5P 3L1, or Dr. Robert S. Klugman, Hadassah School of Dental Medicine, P.O. Box 1172, Jerusalem, Israel.

French Orthodontic Society 1979 Congress, Paris, France, June 1-4, 1979. Themes: New Occlusal Concepts in Orthodontic Treatment and Treat-

ment with extraction of First Molars. Contact: J. Philippe, 44 rue Jean Goujon, 75008 Paris, France.

Sixth World Congress of Acupuncture, Paris, France, June 17-22, 1979. Contact: Pierre Bidault de Villiers, Service Presse "Mondial", 3 rue de la Grande Truanderie, 75001 Paris, France.

Academy of General Dentistry Annual Meeting, New Orleans, June 23-27, 1979. Contact: Department of Meeting Planning, Academy of General Dentistry, 211 East Chicago Avenue, No. 1244, Chicago, Illinois 60611.

American Dental Society of Europe, 85th Meeting, St. Moritz, June 25-29, 1979. Contact: Brian J. Parkins, Society Secretary, 57 Portland Place, London W1N 3AH, England.

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tistry, Honolulu, Hawaii, July 2-5, 1979. Contact: Australian Society for the Advancement of Anaesthesia and Sedation in Dentistry, Suite 904, Hooker House, 175 Pitt Street, Sydney, New South Wales 2000.

Society for the Advancement of Anaesthesia in Dentistry, Second International Congress on Modern Pain

Control (Sedation, Anaesthesia and Analgesia in Dentistry), Royal Lancaster Hotel, London, England, July 13-16, 1979. Contact: Secretary, SAAD '79, 53 Wimpole Street, London W1M 7DF, England.

International Association of Dentistry for Children Seventh Congress, Budapest, July 19-22, 1979.

Contact: Congress Bureau Motesz, H-1361 Budapest, P.O. Box 32, Hungary.

7th International Symposium on Dental Hygiene, Vancouver, British Columbia, July 25-28, 1979. For details see listing under "Canadian Meetings".

American Association of Oral and Maxillofacial Surgeons Annual Meeting, New Orleans, September 14-18, 1979. Contact: AAOMS, 211 East Chicago Avenue, Chicago, Illinois 60611.

Fédération Dentaire Internationale, 67th Annual World Dental Congress, Paris, France, October 20-26, 1979. Contact: FDI, 64 Wimpole Street, London W1M 8AL, U.K.

Deaths

Chopin, Maurice, 76. Montreal, Quebec. University of Montreal, 1924. 31-12-78.

Downey, Alvah, A., 72. Calgary, Alberta. University of Alberta, 1939. 12-1-79. Survived by Florence (wife), Frank and Bruce (sons), Mary-Martha, Karen, Brenda and Linda (daughters).

English, Lloyd E., 67. Celista, British Columbia. North Pacific College of Oregon, 1932. 21-12-78. Survived by Paddy (wife), Read, Bill and Joe (sons).

Hay, Armand, 83. Montreal, Quebec. University of Montreal, 1918. 10-1-79.

MacAulay, Douglas W., 56. Sydney, Nova Scotia. Dalhousie University, 1950. 27-12-78.

Robertson, Clifford S., 77. Dauphin, Manitoba. University of Toronto, 1930. 10-11-78.

Talbot, Jules A., 56. St. Germaine, Quebec. University of Montreal, 1948. 15-12-78.

Weston, Roy V., 81. Schumacher, Ontario. University of Toronto, 1923. 6-11-78.

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Oral health — An aspect of total health

Much publicity has recently been directed towards life-style diseases. These are the diseases produced by neglect and such habits as smoking, excessive drinking, lack of exercise, and overeating. Associated with these diseases are those affecting the oral cavity resulting from dental neglect. Although these oral diseases are widespread throughout the population, unfortunately the public at large does not perceive them as having a relationship to their general health.

We are told that our present-day society is becoming more aware of the level of its health. Certainly, the considerable time and effort directed at publicizing fitness programs would confirm this trend. The media repeatedly gives medical statistics relating to life-style diseases in our times that suggest a healthy body and a longer and more fulfilled life are the rewards to be gained from participation in a regular fitness program. Although members of the health professions generally support such programs, they would be quick to point out that exercise alone will not ensure total body health. Lack of awareness, however, of the importance of other factors in the maintenance of a healthy state and involvement in fitness programs lulls many people into a false sense of security about the level of their overall health.

We, in the dental profession, are aware of the importance of the contribution to total body health of diet and good oral habits. Our patients, on the other hand, are not always cognizant of the intricacies of oral diseases operating within the oral cavity which, if not controlled, can adversely affect their health and lead to serious damage to the dentition. The acceptance by the public of the need for good oral health lags far behind the rapidly accumulating knowledge of the complexities of oral disease processes and the effective methods of control. Unfortunately those who have successfully encouraged the jogger to take to the streets to gain health for his skeletal muscles and his cardiovascular and

respiratory systems have not also made him aware of the need to maintain his oral health.

The impetus and responsibility for bringing about the necessary appreciation of the importance of oral health must come from those who understand the need as well as the attitude of the public towards it. It is the individual dentist who understands the problem and who on a one-to-one basis with his patients will be most effective in bringing about an awareness of the importance of oral health as a part of total health. For the dentist to be effective he must direct the patient's attention to the clinical symptoms of the disease, repair the damaged tissue, and motivate and train the patient to control oral disease so that further damage will not be done. In other words, the patient must learn to recognize what is meant by good oral health.

Although dental literature is heavy with volumes devoted to the early recognition, treatment, and control of dental disease, the dentist is often frustrated in his attempts to develop in his patients an awareness and desire for good oral health. Oral hygiene programs and dental statistics are not any less glamorous than exercise programs and medical statistics. The only difference lies in the awareness of the connection between the two. Surely some of the same methods used to encourage people to develop healthy cardiovascular systems could be employed to encourage them to seek good oral health as well. I am certain the task of the individual dentist would be much easier if he would strive to develop an awareness in his patients that dental health is an important aspect of total health.

W. J. Fleming, DDS, MScD, FRCD(C)

Dr. W. J. Fleming is Chief of Dentistry at St. Michael's Hospital, Toronto and Associate Professor in the Department of Preventive Dentistry, Faculty of Dentistry, University of Toronto.

En se mêlant de ses affaires . . .

Dans le journal "L'information médicale" (Vol. XXXI, #5) le docteur Jules Gilbert se plaint du fait que la ville de Montréal n'a pas encore jugé bon de se conformer à la loi provinciale obligeant les cités et villes dotées d'une usine de filtration d'ajouter le fluor nécessaire à la prévention des caries dentaires.

D'où que viennent les interventions en faveur de cette mesure qui pourtant trouve de moins en moins d'opposition, on ne peut que les juger favorablement, surtout si ces interventions sont appuyées par des arguments honnêtes comme ceux que mentionne le docteur Gilbert.

L'éditorial aurait dû finir exactement là, mais, continue le docteur Gilbert, . . . "Pour comble, voici que les dentistes du Québec veulent, à toute fin pratique, se soustraire à la mesure de la R.A.M.Q. qui vise à fournir gratuitement certains soins dentaires aux enfants de moins de 14 ans. Après leur désengagement et désaffiliation, ils sur-élèvent de 15% les frais autorisés à cette fin, ce qui les fait accuser "of putting their narrow interests ahead of the public interest" (The Gazette, II-30-78).

"Enfin, continue-t-il, ces messieurs doivent se faire à l'idée que les hygiénistes dentaires peuvent consacrer plus de temps et d'attention qu'eux à faire une efficace prophylaxie et une bonne éducation sanitaire. A propos de la fluoration, j'ai déjà écrit qu'en cette matière, le désintéressement des dentistes témoigne d'un sens social très élevé et digne de tous les éloges. Hélas! à moins que dignes professionnels ne reviennent à de meilleurs sentiments, je serai forcé de reviser mon jugement."

Que vient faire le docteur Gilbert dans notre jardin où, comme dans celui des médecins, la Régie a poussé?

Bien sûr, avons-nous eu des discussions qui ont engendré des mouvements de protestation et l'A.C.D.Q. a-t-elle invité les dentistes à réagir selon des tactiques voulues et

raisonnables dans ces circonstances difficiles. Cela fait partie du jeu. Au surplus, les dentistes ont été très satisfaits du travail de l'association et, ils en ont suivi fidèlement les directives avec d'autant plus de ferveur que le public ne s'est jamais vu strictement privé de soins dentaires en dépit de la perturbation avouée dans la distribution de ces soins.

Le docteur Gilbert comprendra que tout mouvement de protestation ne peut être efficace qu'en autant que ça dérange. Le syndicalisme, c'est ça, et il est facile mais dépassé de dire que les protestataires mettent . . . "their narrow interests ahead of the public interest".

Sans vouloir déterrer les morts disons néanmoins que les mouvements de protestation des médecins qui, eux aussi, se sont sentis lésés jadis par la Régie ont été autrement plus discutables, et à ce que je sache, aucun éditorialiste de la profession dentaire ne s'est aventuré à porter des jugements écrits sur des questions dont il ignorait le sens et qui d'ailleurs ne le regardait pas.

Quand le docteur Gilbert mentionne enfin que les hygiénistes dentaires peuvent faire une efficace prophylaxie et une bonne éducation dentaire, il touche un point que la profession dentaire englobe dans la dimension beaucoup plus vaste du MODE de distribution des soins et, encore là, c'est elle qui est la plus habilitée à prendre les dispositions qu'elle juge et jugera propice au maintien des droits et privilèges de tous ceux et celles qui oeuvrent pour la santé de la bouche des québécois.

A plus ou moins brève échéance, la profession dentaire verra ses structures modifiées et la médecine en subira également. Fasse le ciel que chacun rangera ses propres oignons.

Robert Lambert, DDS



Seated, left to right: Richard Gilsig, Donald Neal, Gary Cousens, Linda Teteruck, Michael Gorman Doyle. Standing, left to right: Roger Watson, David Baird, Dr. C. Covit, Sharon Boyd, Jack Gerrow, Jacques Chenevert, Audrey Sherman, Philip Stulginski, Jim Girard, Cameron MacLean, William Leskiw, Craig Meyers.

DENTAL STUDENTS' CONFERENCE HELD IN WINNIPEG

Manitoba's children's dentistry program, the role of the dental nurse and provincial government involvement in the dental profession were among the key issues discussed during the 1978 Canadian Dental Student's Conference held in Winnipeg, October 25-28.

Donald Neal of the University of Manitoba chaired the Conference which was attended by representatives of all 10 Canadian dental schools. Delegates included: David Baird, British Columbia; Cameron MacLean, Alberta; Craig Meyers, Saskatchewan; Roger Watson, Manitoba; William Leskiw, Western Ontario; Sharon Boyd, Toronto; Audrey Sherman, Montreal; Jacques Chenevert, Laval; and Michael Gorman Doyle, Dalhousie.

The Conference was held at the Marlborough Inn and, as in previous years, was funded by the Canadian Fund for Dental Education through a special grant from Colgate-Palmolive Ltd.

CDSC '78 was organized by the Canadian Dental Association's Office of Student Affairs and CDA was represented by its Council on Student Affairs: Richard Gilsig of McGill University, Chairman; Gary Cousens of the University of Montreal, student gover-

nor; Jack Gerrow of the University of Toronto, student representative to the National Dental Examining Board; James Girard of the University of British Columbia, student representative to the Council on Education; Dr. Clyde Covit, CDA president-elect and executive liaison to the Council on Student Affairs. Linda Teteruck, CDA's director of student affairs, also attended.

The opening night reception was sponsored by the Manitoba Dental Association and conference delegates were warmly greeted by Dr. Ben Goldberg, MDA president, and Ross McIntyre, MDA secretary. Other dignitaries present at the reception were: Dr. A. Shinoff, CDA governor for Manitoba; Dr. Walter Shortill, MDA vice-president; Dr. Ralph Crawford of the National Dental Examining Board of Canada; and Tom Haigh, Manager, Association Plans, Kench and Associates.

Donald Neal formally opened the business sessions on Thursday morning, October 26. Following his remarks, Dr. Clyde Covit addressed the delegates, outlining the Canadian Dental Association's many accomplishments and its areas of active endeavour. Topics highlighted by Dr. Covit in-

cluded: CDA's National/Provincial Insurance Program; prepaid dental plans; CDA's liaison with the federal government; taxation; continuing education and communication.

He discussed the pressures being placed on provincial licensing bodies and associations by government involvement in the dental profession at the provincial level and cited examples of increasing government involvement at the federal level: the Anti-inflation Board; the Anti-Combines Legislation, which suggests that fee guides are illegal and that advertising must be permitted within the profession; and the Federal Ministry of Health and Welfare's draft paper on "Guidelines for the Practice of Dentistry in Canada".

Commenting on the draft of guidelines, Dr. Covit stated: "Up to the moment, the dental profession has always set the standards for dental care in this country and I firmly believe the profession should continue to set them. The standards proposed under the Ministry's draft would have a profound effect on the delivery systems of dental care, the types of auxiliaries and cost. The dentists of Canada must recognize the implications that such guidelines will have upon the profession and be

prepared to participate in all debate surrounding them — long before these guidelines become legislation.”

He also warned: “I can see our forms of accreditation being challenged and this is something which must be taken very seriously or the day may come when accreditation will be taken over by an agency other than the dental profession.”

Dr. Covit assured delegates that the Canadian Dental Association recognizes each of the many challenges facing the dental profession and is prepared to face them.

In concluding his presentation, he stressed the importance of student input in the CDA: “We are staking our future on our performance and your participation is vital as you progress through student membership to full CDA membership as it is only through you, our future bloodline, that we will ensure a strong, growing and timely professional organization, united to meet the growing challenges ahead in the dental profession.”

Council on Student Affairs

Richard Gilsig and Gary Cousens spoke to the delegates next, explaining how student input is currently channelled into the Association through the Council on Student Affairs and how it was previously channelled into CDA before the old Committee on Student Affairs was granted full Council status by the Board of Governors. Under the previous Committee status, student input was channelled to the CDA Council on Education which voted on student motions, passed them on to the Board of Governors and, finally, to the appropriate Councils or organizations involved in the motions. Under the new Council, student input is channelled more directly to the organizations in question, thus giving students a much stronger voice in Association affairs. The Council on Student Affairs is one of 11 Councils within the CDA which reports directly to the Executive Council and the Board of Governors and student concerns are now clearly stated in a separate report to the Board.

In explaining the present student structure within the CDA and the

manner in which student concerns are directed to the Board of Governors, Mr. Gilsig and Mr. Cousens impressed on the delegates the increased importance of the student voice within CDA and the added responsibilities given to the students by CDA.

Gary Cousens reviewed the proceedings of the March and September, 1978, meetings of the Board of Governors as they pertained to student interests and concerns. At the March Board meeting few issues of student concern were discussed. However, student activities at the September Board meeting were much more evident since that was the first time the Council on Student Affairs presented its own report to the Board of Governors. Issues of concern to the Board were: the restructuring of the new Council; Council's function and participation at other meetings; liaison with the Council; the presence of the student governor-elect at the Board meetings; representation of the Council at the Canadian Dental Student Conferences; student insurance programs and student eligibility for both the undergraduate and graduate packages.

Insurance and Investment

Tom Haigh, Manager of Association Plans, Kench and Associates, along with his two Winnipeg representatives, Keith Rose and George Tatlock, detailed the various insurance programs being offered to students and dentists alike by Canadian Dental Service Plans Incorporated. Mr. Haigh outlined the CDA National/Provincial Insurance Program and the composition of the CDA graduate insurance package which is applicable from the date of graduation to December 31 of the year of graduation.

It was pointed out to the delegates that, as a result of the actions of the CDA Board of Governors at its September meeting, receipt of this graduate insurance package was contingent upon student membership in the CDA. For students who have not been members in their previous years (i.e. those presently in their second, third, fourth or fifth years) membership will only be required for their remain-

ing years. All new students entering dental schools will have to be members throughout their entire undergraduate years.

The balance of the Thursday morning business session was devoted to discussion of the CDA Council on Student Affairs during its first operational year. Richard Gilsig reviewed the various actions and studies undertaken by the Council and expanded on two studies presently underway. These are:

1. A survey to assess the availability of adequate funding for undergraduate dental students;
2. A study to investigate summer employment opportunities for dental students via a temporary licensure program.

National Dental Examining Board

The afternoon business session began with a discussion on the National Dental examining Board of Canada with Drs. D. Proctor and R. Crawford representing the NDEB. Drs. Proctor and Crawford opened their presentation with a brief overview of the history, functions and responsibilities of the NDEB. They then directed their attention to answering the specific issues raised by the students at NDEB's June 1978 meeting. As a result of the ensuing discussion, three motions were presented and carried by the student delegates:

1. That NDEB provide an informative publication on its structure, function and activities to be supplied as information with the CDA student membership materials sent to each dental student in September of each year;
2. That CDSC request the Council on Student Affairs to support:
 - a) the present method by which graduates of accredited Canadian dental schools obtain certification, and b) the present status of the portability of the NDEB certificate;
3. That CDSC '78 request the Council on Student Affairs to support the concept that the accreditation mechanism continue to be under the auspice of the Canadian Dental Association which, as the national professional body, repres-

ents organized dentistry. (This motion followed discussion of the possibility of government encroachment in the area of accreditation.)

ACFD Teaching Conference

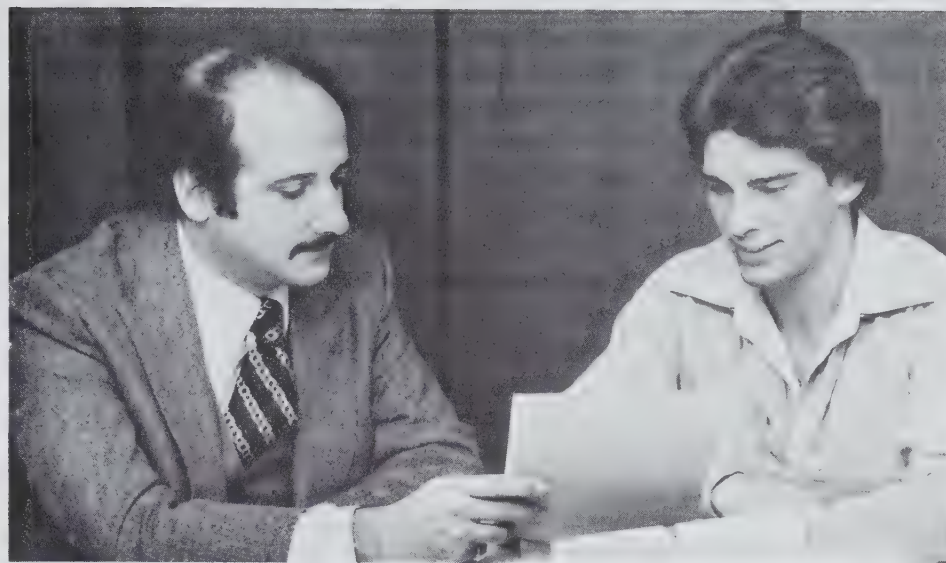
Richard Gilsig synopsized the 1978 Association of Canadian Faculties of Dentistry Teaching Conference on Hospital Dentistry.* In his opinion, the most important aspect of the Conference was the development of guidelines for the teaching of hospital dentistry. Among the recommendations made at the Teaching Conference were one calling for the training period for hospital dentistry to consist of four uninterrupted weeks in hospital during the final year of undergraduate training and another calling for efforts to minimize the duplication between the faculty of dentistry and hospital dentistry training.

Dr. J. Neilson, past chairman of the Canadian Fund for Dental Education, was the next speaker on the Conference agenda. He detailed the history and organization of CFDE, its administration and the sources and dispersal of its funds. The dispersal of funds is on a national basis with the main thrust being teacher training.

Children's Dentistry in Manitoba

The Friday morning business sessions got underway with a presentation by Dr. O. Odium and Dr. W. Shortill on children's dentistry and the dental nurse situation in Manitoba. Drs. Odium and Shortill outlined the present status of dental nurses who have been trained in Saskatchewan by the Manitoba government and have come to Manitoba to practice dentistry. They detailed the duties of these nurses as compared to those of dental assistants and hygienists and the difficulties caused by their presence in the province.

Dr. Shortill discussed the children's dentistry program in Manitoba and the role of the provincial government in regulating this program



Dr. C. Covit (left), CDA President-Elect and Executive Liaison to the CDA Council on Student Affairs, confers with Donald Neal, CDSC '78 Chairman.

through the province's dental profession. He also outlined both the demands and expectations which the government had on the performance of the dental profession in providing free dental care for children.

The students discussed the concerns which the dental nurse situation was causing in Manitoba through the increasing expansion of their duties and the resulting displacement of other dental auxiliaries. In view of the growing concern within the dental profession pertaining to the role of the Saskatchewan-type dental nurse, the students passed the following motion: "That CDSC '78 recommended to the Council on Student Affairs that they obtain an official statement from the various provincial dental associations regarding their stand on this matter."

The presentation by Drs. Odium and Shortill served to increase the students' awareness of the ever increasing role which government is playing in the dental profession. The delegates felt that students in general are unaware of many of the issues discussed during the students' Conference, and particularly the issue of encroachment by various levels of government on the profession. Consequently, the following motion was passed: "That student representatives attending CDSC '78 make their student body aware of the importance of the issues of CDSC, if necessary by class presentations, and

that the student representatives make their student bodies especially aware of the increasing impingement of government on the freedom and rights that professionals have had in the past, and thus the necessity of having a strong voice such as the CDA and the provincial dental associations."

James Girard launched the Friday afternoon session with a report on the actions of the Council on Education during its June 1978 meeting. He synopsized the reports of the Dental Aptitude Test Committee, the Canadian Fund for Dental Education and the National Dental Examining Board of Canada which were presented to the Council.

The students next reviewed the written report submitted by Dr. T. A. Shapero, Canadian Co-ordinator of the International Association of Dental Students. Discussion on the IADS generated debate on the issue of CDA involvement in the IADS. The consensus seemed to be that CDA involvement should be minimal at the present time, although Canadian membership should continue for 1979.

CDA Activities at the Schools

Each student representative commented on the CDA Student membership campaign held every fall at the dental faculties. It appears that student membership is increasing: approximate

*Papers presented at the 1978 Teaching Conference will be featured in the April, 1979, issue of The Journal.

DR. JACKSON IS FIRST CANADIAN WOMAN ELECTED FELLOW OF INTERNATIONAL COLLEGE

Dr. Marjorie Jackson, professor of dentistry at the University of Toronto's Faculty of Dentistry, is the first Canadian woman to be elected a Fellow of the International College of Dentists.

Born in St. Thomas, Ontario, Dr. Jackson received her Diploma in Dental Nursing and, later, her DDS from the University of Toronto. She operated a private practice limited to children from 1950 to 1959 and, in 1959, she was appointed full-time associate professor in the University of Toronto's Department of Paedodontics. In 1967, she was appointed professor of dentistry and Director of the Division of Dental Hygiene.

In addition to the many courses she has taught, Dr. Jackson has designed courses in preclinical and clinical dental hygiene and in dental assisting. The co-author of several research articles, she has served in various capacities in a wide range of organizations. Dr. Jackson was a member of the Ad Hoc Committee on Dental Auxiliaries appointed by the Department of National Health and Welfare's "Wells Committee". She is a past president of the Dental Nurses Alumnae Association of Canada, the Association of Women Dentists of Ontario, the North Toronto Dental Association, and the Tau Tau Chapter of the Omicron Kappa Upsilon.



Dr. Marjorie Jackson

In addition, she is an honorary member of the Ontario and Canadian Dental Hygienists' Associations; a past chairman of the Ontario Dental Association's Dental Public Health Committee; a former member of the ODA's Board of Governors, the Canadian Dental Association's Public Health Committee, and was consultant to the Commission on Dental Practice of the Fédération Dentaire Internationale. She was a member of the Ontario Dental Nurses and Assistants Association's Advisory Committee and the recipient of the first honorary certification to be awarded by that same Association.

CDSC '78 . . .

Continued from page 93

figures place the national average at 85-90 per cent.

The student Table Clinic Program came under discussion as delegates explored ways in which the program could be promoted at the local level in order to generate greater interest among students, staff and local dental societies.

Delegates also passed several motions designed to assist in upgrading awareness of the CDA, its areas of activity and responsibility among the dental student population.

A special dinner for the delegates was sponsored and hosted on Friday evening by Dr. A. Schwartz, Dean of the Faculty of Dentistry, University of Manitoba.

The final day of business sessions included a discussion on the possibilities and advantages of liaison with American Dental Association student organizations with a view to establishing a mutually beneficial exchange of ideas.

Elections were held for two positions on the Council on Student Affairs and the following students were elected: David Baird, chairman of the 1979 Conference, and William Leskiw, CDA governor-elect.

The Council on Student Affairs for 1979 consists of the following members: Jack Gerrow, Council chairman; Gary Cousens, governor; Richard Gilling, past chairman; of the Council: Donald Neal, past CDSC chairman; and David Baird and William Leskiw.

CDA Retirement Savings Plan

Unit values of the Canadian Dental Association's Retirement Savings Plan stood as follows on January 31, 1979:

<i>Common Stock Fund</i>	\$39.243
<i>Fixed Income Fund</i>	\$21.840
<i>Guaranteed Fund</i>	\$15.607
<i>Balanced Fund</i>	\$11.768

Total assets (market value) of the plan were \$32,693,180.67.

The previous month's figures, as of

December 31, 1978, stood as follows:

<i>Common Stock Fund</i>	\$37.543
<i>Fixed Income Fund</i>	\$21.721
<i>Guaranteed Fund</i>	\$15.503
<i>Balanced Fund</i>	\$11.426

Total assets (market value) of the plan were \$32,011,588.28.

For further information write to: CDA-sponsored Pension and Insurance Plans, 234 St. George Street, Toronto, Ontario M5R 2P2.

Laval Dental School names Acting Director

Dr. Roland Vallée, associate professor of operative dentistry, has been appointed Acting Director of Laval University's School of Dental Medicine. Dr. Vallée succeeds Dr. Paul Simard who recently completed his second term of office as Director of the School.

Introducing a new standard for mouthwashes.

There's a wealth of clinical evidence that fluoride mouthwash can significantly reduce caries.

The Research

After reviewing more than 20 independent studies, the International Workshop on Fluorides and Dental Caries Reduction* concluded that fluoride mouthwashes (1) can significantly reduce caries experiences in both fluoridated and non-fluoridated communities (2) may be used in combination with other topically applied fluoride preventive measures (3) appear to be more effective with increased frequency of use (4) are safe from age 6. Furthermore, findings from the Workshop indicated that no fluoride solution was more caries-inhibiting than neutral sodium fluoride.

The Product

New Listermint with Fluoride is a pleasant-tasting neutral pH mouthwash containing 0.22 mg/ml of sodium fluoride (100 ppm fluoride ion). This concentration of fluoride ion was tested in some of the studies reviewed by the Maryland Workshop, and, the Health Protection Branch has approved the brand's New Drug Submission, which provided evidence that 100 ppm fluoride ion (as found in Listermint with Fluoride) is an effective level for caries reduction. We hope you and your patients will take the opportunity to confirm the conclusions of the Maryland Workshop with our new product.



EDUCATE THE PUBLIC ABOUT THE BENEFITS OF FLUORIDATION

Since 1945, when water fluoridation was first introduced in Canada, many studies have been undertaken to determine the safety of fluoridation and its potential benefits in reducing dental caries. These studies indicate that water fluoridation is an effective, safe and inexpensive public health measure that can reduce by half the incidence of dental caries and thus lower dental health care costs.

Despite the large and growing body of evidence which attests to the value of water fluoridation, some individuals and organizations still oppose the measure, presenting various erroneous medical, legal and engineering claims. Since the public is seriously confused by this controversy, an effort must be made to present the facts on a continuing basis. Even in areas where water fluoridation is mandatory, the profession must still continue to reiterate the efficacy and safety of fluoridation. The evidence exists to contradict the claims of the anti-fluoridation groups. Correct fluoridation information must be presented to the public.

In an effort to reinforce public confidence in the efficacy and safety of water fluoridation, the Canadian Den-

tal Association has developed a series of leaflets, pamphlets, and a set of seven advertisements, to assist the health professions in Canada to educate the public.

In the December 1978 issue of the Journal, a leaflet, entitled "Nature's Way to Fight Tooth Decay" was introduced. The leaflet was designed for communities who are contemplating a fluoridation campaign, and is available in English, French, and English/French. The leaflet can be adapted for use as a flyer, for mailings to community voters, as handouts at public meetings, or in a variety of ways to suit specific programs.

The most recent and newly revised pamphlet, entitled "Facts Favour Fluoridation" is included as an insertion opposite. The pamphlet has several new features which include Canadian references and a bibliography. The pamphlet presents facts about dental caries; explains the safety and efficacy of water fluoridation and the need for this important measure. This pamphlet is available in English and French at a cost of \$10.00 per 100.

To assist the profession in obtaining the most effective media coverage prior

to a community fluoridation campaign, a set of seven advertisements has been developed. Several of the advertisements were designed to inform communities of the benefits of water fluoridation and the others to generate voter support. A return coupon is included in each advertisement so that fluoridation campaign organizers can record findings and publicize support for fluoridation. The advertisements are also designed as low-cost newspaper insertions. They can be printed as flyers for mailings to community voters and as handouts at local medical and dental offices, at PTA meetings, city council meetings and shopping centres.

The advertisements were created for the American Dental Association and adapted for use in Canada by Mr. Lloyd Bowen, Fluoridation Officer, Canadian Dental Association, with the permission of the American Dental Association.

A comprehensive Fluoridation Campaign Kit is available and can be obtained by writing to: Mr. Lloyd Bowen, CDA Fluoridation Officer, c/o 234 St. George St., Toronto, Ontario M5R 2P2.

DR. WALKER SHORTILL NAMED PRESIDENT OF MANITOBA DENTAL ASSOCIATION

Dr. Walker Shortill was installed as the 55th President of the Manitoba Dental Association during the Association's 94th Annual Meeting held in Winnipeg.

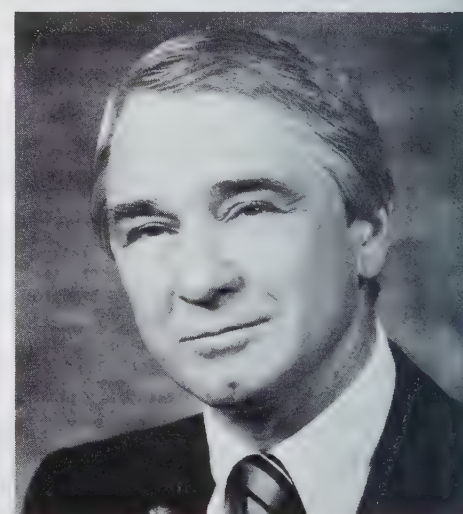
Dr. Shortill has practised general dentistry in St. James-Assiniboia, since graduating from the University of Toronto in 1951.

He is a Past President of the Winnipeg Dental Society, has served on many Committees on the Manitoba Dental Association, and has represented his Province at National Meetings of the Canadian Dental Associa-

tion on auxiliary utilization and Manpower planning. Over the past several years Dr. Shortill has lectured in practise Management at the University of Manitoba's Faculty of Dentistry.

He has been on the Manitoba Dental Association Board of Directors since 1973 and was Vice President in 1978.

Other Members of the Manitoba Dental Association Board of Directors are: Dr. Ben Goldberg, Dr. Harold Diamond, Dr. Robert Baker, Dr. Ted Hechter, all of Winnipeg; Dr. Carl Enns of Portage la Prairie; Dr. Vern Rosnoski of Russell; and Mrs. Marg Miller, the auxiliary representative.



Dr. Walker Shortill

FACTS FAVOUR FLUORIDATION



What do we know?

Too many cavities . . . Most people would be happier with less tooth decay and fewer fillings. Unfortunately, practically everyone has experienced this disease by age 10. By age 13, an average of seven permanent teeth have been attacked. The cost of treating tooth decay mounts up, particularly for families with several children. In most localities dentists can barely provide the treatment necessary to repair the continuing damage and in other communities there are not enough dentists to control decay by treatment alone.

More dentists – or fewer cavities? . . . It would be possible to train enough dentists to repair damage caused by tooth decay. However, that approach would not prevent suffering to children and adults that tooth decay often brings. Fortunately, nature has shown us a way to prevent much of this damage without risk to other important aspects of health.

Nature shows the way . . . Scientists have discovered that people have less tooth decay if their drinking water contains fluoride. Why? As teeth form during childhood the fluoride becomes part of the tooth enamel, making teeth stronger and more resistant to decay.

Most natural water contains some fluoride. If the correct amount is present, people automatically benefit. Since 1917, Stratford, Ontario, has used naturally fluoridated water

containing 1.3 to 1.6 parts of fluoride to a million parts of water. The average 16 to 18-year-old in Stratford has only four permanent teeth showing any sign of tooth decay. But in cities with little or no fluoride in the water supply, the average 16 to 18-year-old has more than 10 decayed teeth.

Optimal fluoridation . . . The striking protection against tooth decay seen in Stratford can be provided in fluoride-deficient areas simply by adjusting the fluoride level in the water supply to 1 to 1.2 parts per million. In 1945, Brantford, Ontario, began controlling fluoridation of the water supply at this level to obtain maximum protection against tooth decay. Since that time tooth decay has decreased dramatically. By 1963, Brantford children, including teenagers, who drank fluoridated water from birth had as little tooth decay as the children from Stratford.



Proven safe and effective

Safety first . . . Water fluoridation would not seriously be advocated if it caused or promoted disease elsewhere in the human body. Dozens of studies have been carried out to search for possible effects on general health. Detailed medical investigations and research studies show that people who use optimally fluoridated water throughout their lives have no greater susceptibility to cancer, kidney disorders, hardening of the

caries, heart disease, arthritis, rheumatism, bone fractures, allergies, cretinism, goiter, etc., than do those living in low-fluoride communities. In 1978, the federal Department of National Health and Welfare reviewed medical evidence, including three recent studies on cancer, and concluded that "the maintenance of the fluoride level in drinking water at approximately 1 mg/L (1 milligram to the litre or 1 part per million) is the most efficient procedure to decrease the incidence of dental caries (tooth decay), and such a level of fluoride poses no risk to the health of Canadians."

Safety always . . . Fluoridation machines are extremely accurate. The largest possible variation is only about 1/10th of the correct amount. Because equipment failures would result in temporary shutdown of the fluoridating machinery, addition of excessive fluoride is not possible. Furthermore, public works personnel carry out tests at regular intervals to verify that the water contains the correct amount of fluoride.

Proven effectiveness . . . In hundreds of communities using fluoridation, the amount of tooth decay in children has been reduced to the same low levels found in communities where the water naturally contains sufficient fluoride.

In Canada, more than 8.5 million people drink water which contains fluoride at the optimal level. The list includes such cities as Ottawa, Corner Brook, Charlottetown, Halifax, Moncton, Laval, Toronto, Winnipeg,

Saskatoon, Edmonton, Kamloops, Whitehorse, and Yellowknife. In 16 North and South American countries there are more than 150 million people who drink water daily containing optimal amounts of fluoride.

Not Mass medication . . . "The administration of remedies" is a definition of medication. Fluoridation helps prevent tooth decay – just as chlorination and pasteurization prevent other diseases. Fluoridation provides an essential nutrient. It is NOT a treatment or remedy.

Fluoride is a natural substance present in almost all water supplies. Fluoridation adjusts the level of the fluoride element to the concentration which nature has shown to be necessary for proper formation of bones and teeth.

No taste or odour . . . Hundreds of cities with fluoridated water can prove there is absolutely no change in taste or odour of the water supply because of fluoridation.



Why water fluoridation is best

Proven safety . . . More than 10 million Canadians and Americans have consumed water with 0.7 to 2 parts per million naturally-occurring fluoride for most or all their lives. Such fluoride levels have proven to be safe and effective even with individual variations in water intake. Fluoridation is recommended by many organizations responsible for human health.

Costs only pennies . . . The cost of fluoridation, even in small communities, is negligible. The average is about 15 to 20 cents a person annually, depending on the compound used and other factors. The total cost of providing fluoridated water for an individual's *lifetime* (an average 80 years) is under \$16. This is less than the average amount spent *yearly* by Canadians for dental treatment.

Alternatives explored . . . To be effective against dental decay, fluoride must be provided on a daily basis over the entire period of tooth formation – from birth to about age 14. Recent data suggest that fluoride consumption throughout life may be important to general health as well as to dental health.

Fluoride added to milk has produced modest reductions in tooth decay. However, the technical problems encountered, the wide variations in milk consumption by individuals, the limited use of milk by low-income families and the marked drop in milk consumption by teenage children, all combine to severely limit the practicality and effectiveness of milk fluoridation.

Fluoride tablets and drops are effective when used on a daily basis for the first 14 or more years of life. However, when such programs have been instituted in Canada and the United States, utilization dropped to about 15 per cent of the child population within one to two years after the program's start, due to user apathy.

Neither alternative begins to approach the overall effectiveness, simplicity and control that has been repeatedly demonstrated by community water fluoridation.

Topical fluorides . . . The periodic application in the dentist's office of topical fluoride on erupted teeth and the daily use elsewhere of fluoride toothpastes or mouth wash can supplement but not replace the protection provided by water fluoridation. These measures are recommended particularly for individuals who live in low-fluoride areas.



Act now

For better looking teeth . . . Teeth are more attractive in communities with water containing the correct amount of fluoride. Even in areas with twice the optimal concentration of fluoride, children's teeth are excellent in appearance. A small percentage of children in such areas have fine whitish flecks in the enamel but this so-called "mottling" does not harm either the appearance or strength of the teeth.

Adults benefit too . . . One survey shows 50 per cent less tooth decay among adults raised in a community with fluoride in the water. People in a neighbouring community without fluoride had lost three to four times as many teeth. The better teeth which children develop by using fluoridated water last throughout adult life.

What to do now . . . Tooth decay is as prevalent as the common cold but can be even more dangerous to health.

Dental disease is a provincial and community problem.

Better teeth with less decay result from fluoridated water.

Fluoridation, coupled with regular tooth-brushing and less sweet food, is the most practical and economical way to prevent dental problems. Call your local health officials, arm yourself with reliable information and help bring the benefits of fluoridation to your community.

In essence, fluoridation:

- Is an essential nutrient;

- Will reduce tooth decay by at least 50 per cent throughout life;

- Has no adverse effects;

- May have other health benefits to adults;

- Should be consumed by everyone throughout life;

- Has reliable equipment and procedures that are available;

- Has no alternative that can at present replace it as an effective, safe and feasible public health measure.



These responsible groups endorse fluoridation . . .

Canadian Dental Association

Canadian Medical Association

Canadian Public Health Association

Department of National Health and
Welfare

World Health Organization



For further information . . .

Please consult your local Health Uni

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Canadian Dental Association

1815 Alta Vista Drive
Ottawa, Ont., Canada K1G 3Y6

2/79

EDUCATION DU PUBLIC QUANT AUX BIENFAITS DE LA FLUORATION

Depuis la première expérience de fluoruration au Canada, en 1945, ce procédé a fait l'objet de nombreuses études pour en déterminer l'absence de danger et les bienfaits qu'on peut en tirer par la réduction du nombre de caries dentaires. Ces études ont révélé que la fluoruration de l'eau est une mesure de santé publique efficace, sûre et peu coûteuse qui réduit de moitié la fréquence des caries dentaires et entraîne de ce fait une diminution des dépenses de soins dentaires.

En dépit de l'accumulation massive des preuves témoignant de la valeur de la fluoruration de l'eau, certaines personnes et organisations s'y opposent encore, s'appuyant sur des allégations erronées de nature juridique, médicale ou technique. Comme cette controverse crée la confusion dans l'esprit du public, un effort continu s'impose afin de lui présenter les faits. La profession dentaire se doit de continuer à réitérer ses preuves de la sécurité et de l'efficacité de la fluoruration. Les faits prouvent indubitablement que les adversaires de cette mesure sont dans l'erreur. Il importe donc de rectifier la situation aux yeux du public.

C'est donc dans le but de raffermir la confiance du public envers la fluoruration que l'Association Dentaire Canadienne a réalisé une série de dépliants et de brochures, ainsi qu'un ensemble de sept messages publicitaires, pour ap-

puyer les efforts des professions de la santé pour renseigner la population canadienne.

Le numéro de décembre 1978 du Journal faisait connaître un nouveau dépliant intitulé "*Un moyen naturel de lutter contre la carie dentaire*". Cette publication a été rédigée à l'intention des localités qui envisagent une campagne d'information sur la fluoruration de l'eau; les intéressés peuvent s'en procurer des versions françaises, anglaises ou bilingues. On peut le distribuer facilement dans le courrier pour atteindre les électeurs d'une localité, le donner aux participants des audiences publiques ou l'adapter à toutes sortes d'utilisations pour appuyer divers programmes.

Le dépliant le plus récent, révisé dernièrement, s'intitule "*Les faits parlent en faveur de la fluoruration*" et figure sur la page opposée à titre d'insertion. Cet ouvrage se distingue par les éléments nouveaux qu'il apporte, dont des références canadiennes et une bibliographie. Il expose les faits relatifs aux caries dentaires, explique la sécurité et l'efficacité de la fluoruration de l'eau et la nécessité de cette importante mesure. Le dépliant est disponible en français et en anglais, à raison de \$10 pour 100 exemplaires.

Sept messages publicitaires réalisés par l'ADC visent à susciter le plus d'intérêt possible dans les média d'in-

formation avant la tenue d'une campagne en faveur de la fluoruration dans une localité. Certains des messages visent à renseigner la population sur les bienfaits de la fluoruration de l'eau, tandis que les autres ont pour but d'obtenir l'appui des électeurs. Un coupon-réponse est annexé à chaque message, de sorte que les organisateurs de la campagne puissent en évaluer l'impact et faire état de l'appui reçu. Les messages ont également été conçus afin de servir d'insertions peu coûteuses dans les journaux. On peut également les imprimer sur des feuillets qu'on peut envoyer par le courrier aux électeurs d'une localité, ou encore distribuer dans les bureaux des médecins et des dentistes, lors de réunions de parents et d'enseignants, à des réunions du conseil municipal et dans les centres d'achat.

Conçus à l'origine pour l'American Dental Association, les messages ont été adaptés à la population canadienne par M. Lloyd Bowen, conseiller en fluoruration de l'Association Dentaire Canadienne, avec l'autorisation de l'American Dental Association.

On peut se procurer la pochette complète de matériel d'information pour les campagnes de fluoruration en s'adressant à M. Lloyd Bowen, conseiller en fluoruration de l'ADC, a/s: 234 rue St. George, Toronto, Ontario M5R 2P2.

Régime d'épargne-retraite de l'ADC

Les valeurs respectives du Régime d'épargne-retraite de l'Association Dentaire Canadienne étaient les suivantes au 31 janvier, 1978:

<i>Fonds d'actions</i>	
<i>ordinaires</i>	\$39.243
<i>Fonds à revenu fixe</i>	\$21.840
<i>Fonds garanti</i>	\$15.607
<i>Fonds de placement</i>	
<i>équilibré</i>	\$11.768

L'avoir total (valeur marchande) du régime s'élevait à \$32,693,180.67.

Au 31 décembre, 1978, les chiffres du mois précédent étaient les suivants:

<i>Fonds d'actions</i>	
<i>ordinaires</i>	\$37.543
<i>Fonds à revenu fixe</i>	\$21.721
<i>Fonds garanti</i>	\$15.503
<i>Fonds de placement</i>	
<i>équilibré</i>	\$11.426

L'avoir total (valeur marchande) du régime s'élevait à \$32,011,588.28.

Pour obtenir tout renseignement supplémentaire, prière de s'adresser aux: Régimes des rentes et d'assurances subventionnés par l'ADC, 234 rue St. George, Toronto, Ontario M5R 2P2.

LE MINISTRE DES FINANCES REPOND A LA LETTRE DU PRESIDENT DE L'ADC

Dr. R. L. Moran

Président

Association dentaire canadienne.

Cher Docteur Moran,

Je vous remercie de votre récente lettre au sujet de la présentation, le 16 novembre 1978, de la nouvelle disposition d'abattement fiscal concernant les petites entreprises. Depuis, il m'est parvenu un certain nombre d'opinions intéressantes émanant des secteurs concernés et dont j'ai pu m'inspirer lors de la rédaction du projet de réglementation.

Je vous fais parvenir ci-joint, pour votre information, une copie du communiqué de presse distribué le 19 décembre 1978, lors de la publication du projet. Mon interprétation des objectifs visés par cette nouvelle mesure d'abattement fiscal y est clairement détaillée.

Ainsi que je l'ai déclaré lors de la présentation du Budget, les petites entreprises jouissent, au Canada, d'un régime fiscal particulièrement faste, de loin supérieur à celui qu'accorde le fisc américain aux petites entreprises de ce pays. L'abattement fiscal accordé aux petites entreprises coûte près d'un milliard de dollars au Trésor canadien, somme qu'il lui faut récupérer au moyen d'impôts plus élevés réclamés à d'autres catégories de contribuables. Permettre que cette déduction soit ré-

clamée par des catégories de contribuables à qui elle n'était pas destinée revient inévitablement à augmenter les impôts d'autres groupes, aussi bien les particuliers que les hommes d'affaires non constitués en corporation. Il est donc de mon devoir de veiller à ce que l'abattement fiscal en question bénéficie aux ayants droit et à eux seuls.

Il ne fait aucun doute que le gouvernement se doive de stimuler les petites entreprises à l'aide d'une fiscalité appropriée. Les petites entreprises en ont besoin pour faire face aux risques inhérents aux affaires, pour accumuler un capital de croissance et assurer la création de nouveaux emplois et enfin pour concurrencer avec quelque chance les grandes compagnies canadiennes et étrangères.

C'est dans ce contexte que la nouvelle déduction avait été préparée. Mais elle fut conçue avant que la constitution en corporation des médecins, des avocats, des dentistes et des comptables ne passe à l'ordre du jour et il n'avait jamais été dans l'esprit du législateur que les professions précitées en soient bénéficiaires. On observe dans ces professions un niveau pratiquement stable de la demande de services et leur pratique est fort justement soumise à des conditions d'admission des plus rigoureuses. Les risques encourus par ces professionnels ne ressemblent pas à ceux des petits entre-

preneurs dont la prospérité est étroitement sujette aux fluctuations de l'économie et de la concurrence.

Le problème a pris un caractère d'urgence à la suite d'un mouvement des personnes de profession libérale d'une province vers la constitution systématique en corporation, ce qui a eu pour effet de déséquilibrer la répartition de l'impôt entre les provinces. Nos propositions visent à assurer au contribuable canadien, une imposition équitable où qu'il réside.

Il est, bien entendu, essentiel de noter que la nouvelle réglementation ne limite nullement le droit de personnes exerçant une profession libérale de constituer une corporation. En effet, les considérables avantages fiscaux qu'apporte la constitution en corporation, qui n'ont aucun rapport avec l'abattement d'impôts s'appliquant aux petites entreprises, restent inchangés. Et c'est dans cette optique que j'estime que les changements proposés sont nécessaires et équitables et garantissent que le fardeau fiscal soit convenablement réparti parmi tous les Canadiens.

Je vous prie d'agréer, cher Docteur Moran, l'expression de mes sentiments distingués.

*Le Ministre des Finances
Ottawa, Ontario*

Jean Chrétien

QUELQUES REMARQUES RELATIVE A L'ABATTEMENT FISCAL APPLICABLE AUX PETITES ENTREPRISES

A la suite du budget du 16 novembre 1978, le ministère fédéral des Finances présentait le 19 décembre un projet de loi et la réglementation relatifs à l'abattement fiscal pour les petites entreprises et à l'application de cette déduction à des personnes de profession libérale,

constituées en corporation, ou à des compagnies de service apparentées à des entreprises professionnelles.

Le fait que ce communiqué ait été publié immédiatement avant les vacances parlementaires et que le Ministre ait signalé que toute représentation qui

serait faite avant la présentation du projet de loi au début de la nouvelle année ferait l'objet d'étude approfondie, laisserait supposer qu'il s'agit plutôt d'un projet destiné à rendre public cette information et que les dispositions qui sont présentées seront

probablement modifiées avant d'être adoptées.

Il vaut toutefois la peine de noter que le gouvernement n'a pas l'intention de mettre immédiatement ces changements en vigueur. Aux termes du projet, la réglementation révisée relative à l'abattement fiscal pour les petites entreprises ne s'appliquera pas aux compagnies existantes jusqu'aux années de taxation suivant 1979. Pour les compagnies constituées en corporation après le 16 novembre 1978, les nouveaux règlements entreront en vigueur pour les années de taxation qui suivent 1978. Ce délai vise à donner aux compagnies existantes "assez de temps pour s'adapter".

A moins que d'importants changements ne soient effectués avant que les nouveaux règlements ne soient adoptés, certaines activités des compagnies seront identifiées à titre "d'affaires non qualifiables" dans le cadre de l'application de l'abattement fiscal pour les petites entreprises.

Une compagnie constituée en corporation, pratiquant la comptabilité, la médecine dentaire, le droit ou la médecine sera "non qualifiable" si, aux termes de la loi d'une ou de plusieurs provinces, une compagnie n'est pas autorisée à exercer cette profession. Présentement, seule la province d'Al-

berta autorise les personnes exerçant les professions précitées à constituer une corporation et de toute évidence, l'amendement vise à placer ces professionnels de l'Alberta, constitués en corporation, sur la même base fiscale que leurs collègues non constitués en corporation des autres provinces.

La réglementation proposée en vue de déterminer l'admissibilité d'une compagnie connexe offrant des services (on parle parfois de "compagnie de gestion") est plus complexe. Ceci est partiellement dû à la difficulté d'établir une distinction équitable entre les compagnies d'affaires de bonne foi et celles que le gouvernement estime ne servir qu'à la transformation de gains professionnels en revenus admissibles à l'abattement fiscal s'appliquant aux petites entreprises. Les règlements en question semblent avoir été hâtivement conçus et devront être considérablement modifiés avant d'être adoptés.

Sous leur forme actuelle, ces règlements proposent qu'une entreprise sera non qualifiable si son principal objectif est de fournir des services de gestion, d'administration, financiers, d'entretien ou autres, à une compagnie apparentée. Il n'y a pas d'interprétation des termes "principal objectif", ni une indication quelconque que l'on

vérifierait le volume d'affaire ou le niveau des activités. Au contraire, il semble clair que le gouvernement a l'intention de classer la majorité de ces compagnies dans une catégorie non qualifiable, seulement ou principalement sur la base du fait que les actions de la compagnie de service sont entre les mains des personnes (ou de personnes apparentées) propriétaires de la compagnie connexe.

Bien qu'il ne soit pas probable que le ministère des Finances change radicalement son attitude vis-à-vis de cette question, l'on espère que la réglementation finalement adoptée pourra être appliquée de manière plus équitable que celle qui a été proposée.

Nouvelles brèves

Les diètes riches en sel sont à éviter dans les cas d'hypertension. Si, au surplus, les diètes sont riches en sucre, les dangers d'encourir des troubles coronaires sont doublés.

Le docteur Gregg Halleran de l'hôpital des vétérans et du Collège médical de la Virginie (Richmond, Virginie, E.-U.) estime que le fait de s'abstenir des œufs au déjeuner n'est pas une prévention contre les accidents coronaires.

(Medical Post, mars 1978, pp. 2-3)

LES REVENUS DU FCED POUR 1978 DÉPASSENT \$280,000

Selon le nouveau président du Fonds canadien pour l'enseignement dentaire, le Dr James A. Guest, "le revenu d'exploitation pour le FCED l'an dernier s'est élevé à \$223.544 et le revenu provenant des fonds de dotation, à \$57.000".

"Les dons personnels en provenance de la profession, de l'ordre de \$61.400, n'ont pas atteint l'objectif que nous nous étions fixé et, pour la première fois en trois ans, ils ont été dépassés par les dons en provenance d'entreprises commerciales et industrielles, qui s'élevaient à plus de \$75.000 ou 26% de plus que pour toute année précédente. C'étaient les dons fort appréciés provenant des fondations et d'organismes

dentaires ainsi que l'intérêt en provenance de placements qui constituaient le solde de notre revenu d'exploitation," a signalé le Dr Guest.

"En 1978, les dons contribués aux fonds de dotation existants comprenaient \$55.000 du Dr Lorne E. MacLachlan et \$2.000 du Club d'étude des couronnes et des ponts de l'Académie des dentistes de Toronto".

"Le FCED a pour unique objectif d'assurer le perfectionnement continu du niveau des services dans le domaine de la santé dentaire et nous sommes vivement reconnaissants envers nos généreux donateurs, les anciens ainsi que les nouveaux," a conclu le Dr Guest.

Aux Etats-Unis, une personne sur vingt souffre de maladie rhumatismale: c'est une fréquence plus élevée que les maladies suivantes réunies — cancer, tuberculose, diabète, cardiopathie. Constituant un problème économique majeur, les maladies rhumatismales ne suscitent pas un intérêt proportionnel aux inconvénients qu'elles engendrent. Cette relative indifférence peut tenir du fait que, per se, elles n'entraînent pas la mort et qu'en plus, la thérapeutique est aussi incertaine que la pathogénie.

(Internal Medicine in Dental Practice, Collins & Crane, pp. 373-391)

Instructions to Contributors

The Journal of the Canadian Dental Association is currently soliciting research and clinical articles for publication. Interested contributors are asked to use the following outline of requirements when preparing manuscripts.

Manuscripts: Manuscripts should be submitted to the editor with a covering letter requesting consideration for publication in the Journal. Send two copies — original and a carbon — typewritten with all material (text, quotations, tables, legends, references, etc.) double-spaced, on one side of the sheet, $8\frac{1}{2} \times 11$ inches, with ample margins on all four sides. The author should always retain a carbon copy of material submitted. Every article should contain a summary of the contents.

Original articles are considered and accepted subject to the understanding that they are submitted solely to this Journal, and will not be reprinted without the consent of both the editor and the author.

The editor reserves the right to fit articles within the space available and to make usual editorial alterations in manuscripts; these include such changes as are necessary to ensure correctness of grammar and spelling, clarification of obscurities or conformity to Journal style. In no case will major changes be made without prior consultation with the author. The senior author will receive either the edited manuscript or galley proofs for checking prior to publication.

Article Titles Make article titles descriptive but as concise as possible. Long titles discourage reading, present

typographical and layout problems and create difficulties in library indexing.

References: Authors should limit references to published work to the minimum necessary for guidance to readers wishing to study the subject further. They should not quote articles they have never seen. Except in review articles, the maximum number of references should not be more than 25. References should be numbered in the text and should be set out in a separate numbered list at the end of the article.

For journal references, give the author's name, article title, journal name, volume number, first page of article, and year of publication:

1. Gibb, G. H. Methods of achieving improved amalgam restorations. *J Canad Dent Ass* 30:413, 1964.

For books give the author's name, book title, location and name of publisher, year of publication:

2. Kilpatrick, H. C. Work simplification in dentistry. Ed. 2. Philadelphia, Saunders, 1964.

Illustrations: Line and halftone illustrations should be of high quality for satisfactory reproduction.

Photographs — Handle photographs carefully. Do not bend, fold or use paper-clips. Photographs should be unmounted, untrimmed, good, sharp, black and white glossy prints, preferably not larger than 10×8 inches. Color work can only be published at the author's expense. Magnification of photomicrographs must always be given. Photographs must not be written on or typed on. On the back of each photograph, very lightly and in pencil, write the author's name, the figure number and indicate the top edge. If a

figure contains two or more photographs, do not mount the parts; on the back of each photograph write very lightly in pencil the figure number and part letter (Figure 1a, etc.) and indicate the top edge. Patients must not be recognizable unless the written consent of the subject to publication has been obtained.

Drawings — Figures, graphs, charts and diagrams should be drawn and lettered in india ink. Lettering must be large enough to be read after the drawings are reduced to column width (small, simple drawings) or page width (larger, more complex drawings).

Legends — Figure legends should be typed as a group on a separate sheet. They should be separate from the text of the article and from the illustrations.

Tables: Each table should be typed on a separate sheet. Tables should be numbered consecutively and tailored to fit within column width or page width. Table title and table footnotes should be on the same page with the table. Do not show vertical rules in tables.

Permission and Waivers: These should accompany the manuscript when it is submitted for publication. Permission of author and publisher must be obtained for the direct use of material (text, photos, drawings) under copyright that is not your own. Up to one hundred words of prose material usually can be quoted without getting permission, provided the material quoted is not the essence of the complete work. Waivers must also be obtained for the publication of photographs showing persons, unless faces are masked to prevent identification. Waiver forms are available from the editor.

QDSA NEGOTIATES IN QUEBEC

This is the second of a two-part article by Clyde Covit DDS on the QDSA negotiations with the Quebec Government. Dr. Covit is a member of the QDSA negotiations team. The first article appeared in the February edition of the CDA Journal.

“On November 7, 1978, three years six months and seven days after the termination of the original one year agreement, the Quebec Dental Surgeons Association was faced with a parliamentary commission which appeared to be the stepping stone which the Minister of Social Affairs, Dr. Denis Lazure required to pass his special law.”

Truer words were never written, for on November 22, 1978, Bill 84 was presented to the Quebec National Assembly.

In the interim, as a result of the parliamentary commission, the QDSA was informed, at an eight-minute negotiation session, that the government's monetary offer was still 7.85 per cent and furthermore that their offer was subject to all the other related conditions except that they could implement the international procedure codes within 90 days, although it would take only 60 days to implement a new plan.

The QDSA decided that since the government was not negotiating and since the Minister had promised to reimburse the parents of children under the age of 14 that they would cooperate.

The dentists in Quebec were provided with all that was required to put the QDSA demand of 15 per cent into effect, including the necessary receipts which would allow the Minister to keep his promise with regard to reimbursement.

The public was kept well-informed of the actions of the QDSA, for the dentists who were actually non-

participants were still providing a vehicle by which their patients could be reimbursed.

However, with the presentation of Bill 84 on November 22, the QDSA had no alternative on December 6 but to re-engage its members into the denticare scheme, for the rules pertaining to negotiations during the period of conflict were to be changed.

On November 29, four professional associations: the Federation of General Practitioners of Québec, the QDSA, L'Association des Optométristes du Québec and L'Association Québécois des Pharmaciens propriétaires requested a Parliamentary Commission in order to protest certain anomalies contained in Bill 84.

Why?

Because Bill 84 would modify the Quebec Health Insurance Act to the point where it would become unacceptable to professional associations, health professionals and beneficiaries of the Quebec Health Insurance Scheme.

On December 1, the Minister of Social Affairs informed QDSA that it was not his intention to hold a Parliamentary Commission with regard to Bill 84.

On December 4, the four professional Associations held a news conference to explain why they requested a Parliamentary Commission. The following points were made:

1) An Anti-Union Bill

The Quebec Health Insurance Act presently stipulates that joint relations between the Minister of Social Affairs and health professionals are determined by collective agreement. The law, therefore, permits the parties concerned to define the scope of an agreement, to establish norms that govern the practice of health professionals within the framework of the agreement and to set the rules of application for

these norms by the process of active negotiations.

The law also permits a means of disputing matters in order to provide solutions for the renewal of a collective agreement between a health professional association and the Minister of Social Affairs.

The Bill as presented limits the possibilities of negotiating, affects the existing agreement and grants the Minister and the Quebec Health Insurance Board privileges that, until now, were by law awarded to the parties concerned. The Bill gives the QHIB the powers of a penal code as a health professional may be prosecuted for not abiding by provisions of the agreement.

The constraints imposed by Bill 84 on health professionals who exercise their rights to withdraw as means of pressure are such that only one final solution remains possible — the closing down of their offices. It is saying that to protect themselves against abuse, health professionals must resort to a method that penalizes the population.

2) An Anti-Health Professional Bill

The Bill would considerably increase the powers of the QHIB. It grants the QHIB the right to be reimbursed for services they deem not covered, not rendered or not dispensed in conformity with the law, regulations or the collective agreement. This may be done on the strength of a simple investigation provided the Board deems it necessary. Further to this investigation the health professional has the responsibility of clearing himself.

The QHIB is not obligated to justify its initiative and doing so becomes a judge that may subjectively interpret and apply the law, the regulations and the collective agreement and an executor who can retroactively apply

the economic sanction and collect from the revenues of the health professionals.

By virtue of the proposed amendment, the health professional may not be heard to justify himself prior to the decision being rendered, as he will be informed after the fact. Then, if the dentist wishes to challenge the decision, he is faced with the obligation of demonstrating to the satisfaction of the QHIB that the decision of the Board is ill-founded.

The proposed legislative provisions grant the QHIB the extreme power to enable it to overrule any recommendations on the part of a review committee, and for all intents and purposes, eliminate the use for such a committee.

3) An Anti-Beneficiary Bill

Bill 84 affects the rights of beneficiaries on three major fronts:

a) A beneficiary must present his QHIB card in order to receive insured services. This applies to the emergency situation as well.

b) The beneficiary has only one recourse against any decision of the QHIB and that is a court of law.

Thus the QHIB places the burden for its short-comings on the shoulders of the health professional and the beneficiary.

c) It destroys the confidentiality of the beneficiary's medical file for it gives the Board access to the "documents" contained in the medical file. Furthermore, it opens the beneficiary's medical file to the QHIB by a simple request to the court, in any case where a person refuses such Board intrusion.

Bill 84 would also extend the investigative powers of the Board by permitting it, in the future, to "survey through sampling" in order to verify the dispensation of insured services. This "survey", possibly by telephone, in no way respects the relative confidentiality guaranteed by a survey done by "sealed mail." One can easily imagine the imbroglios, the misunderstandings, the unreasonable remarks that could result and that are inevitable under the circumstances. Discord and distrust will prevail between health professionals and beneficiaries.

Given that Bill 84 is anti-union,

anti-professional and anti-beneficiary, the health professionals were opposed to it and requested a hearing before a Parliamentary Commission.

A Parliamentary Commission was held December 11, and the health professionals presented their point of view in detail.

Dr. Lazure in his concluding remarks stated that he still felt that the amendments contained in Bill 84 would decrease the percentage of fraud and abuse even though the percentage is relatively low at the present.

On December 15, the complete list of amendments was ready for second reading of Bill 84.

One of the major changes that appeared is contained in amendment 61 which states that:

The Lieutenant-Governor in Council can by law establish a tariff and the rules of application for assured services rendered by dental surgeons which are listed in the agreement between the Minister of Social Affairs and the QDSA (March 14, 1974) as well as for those services for which no tariff is provided for in the agreement.

Another amendment makes social welfare recipients beneficiaries of the plan and therefore the government could negotiate for these recipients or implement amendment 61.

With Bill 84 in second reading, the QDSA was again faced with the decision to call a general meeting of its members immediately or to once again try through intensive negotiations to reach a suitable solution. The QDSA decided on the latter.

The last two weeks of January proved to be fruitful for all concerned as concessions were made at the negotiation table and there were further amendments to Bill 84 which will shortly be presented for final reading in the National Assembly.

Some of the amendments to Bill 84 will allow: active negotiations; government right to medical files but only to that information related to the claim which is filed; that the card will not be obligatory in emergency situations; the profession the right to non-participation as a group but the gov-

ernment can delay such a tactic for 90 days; and that the amendment 61 would be dropped in third reading of the Bill if there was a collective agreement.

The major points of contention (CDA Journal — February 1979) were more or less resolved at the negotiation table as the profession received a greater increase in fees (9.6 per cent overall increase which includes a 40 per cent increase for restorative services and a 33 per cent decrease for preventive services while maintaining the frequency at which these acts may be rendered). There will be retroactive compensation of four million dollars to be divided among the profession, parity with the medical profession for those professionals on salary and implementation of the international procedure codes 60 days after the plan goes into effect. The new acts which have been added to the plan will generate fees which are approximately 75 per cent of the 1976 QDSA Suggested Fee Guide.

However, the ceilings for income generated from the plans will remain at \$133,000 per year or \$33,250 per quarter with 33⅓ per cent of the fee remunerated instead of 25 per cent for any other services rendered during that quarter. The offer is now a package deal for with Bill 84 the social welfare recipients would become beneficiaries of the plan and the government could negotiate on their behalf at the same time.

The plan was accepted by an overwhelming majority on February 3, 1979 by the general membership of the QDSA, the agreement should be signed on February 23, 1979 and should come into effect on April 9, 1979.

Only time will tell what the true effect of Bill 84 and the establishment of ceilings will have on the dental profession. However, the principle goals established by the QDSA were achieved in the normative clauses, tariffs, and rules of application.

The agreement respects the known modes of practice within the profession, the objectives of government and most important the interests of the population, our patients.

Clyde Covit, DDS

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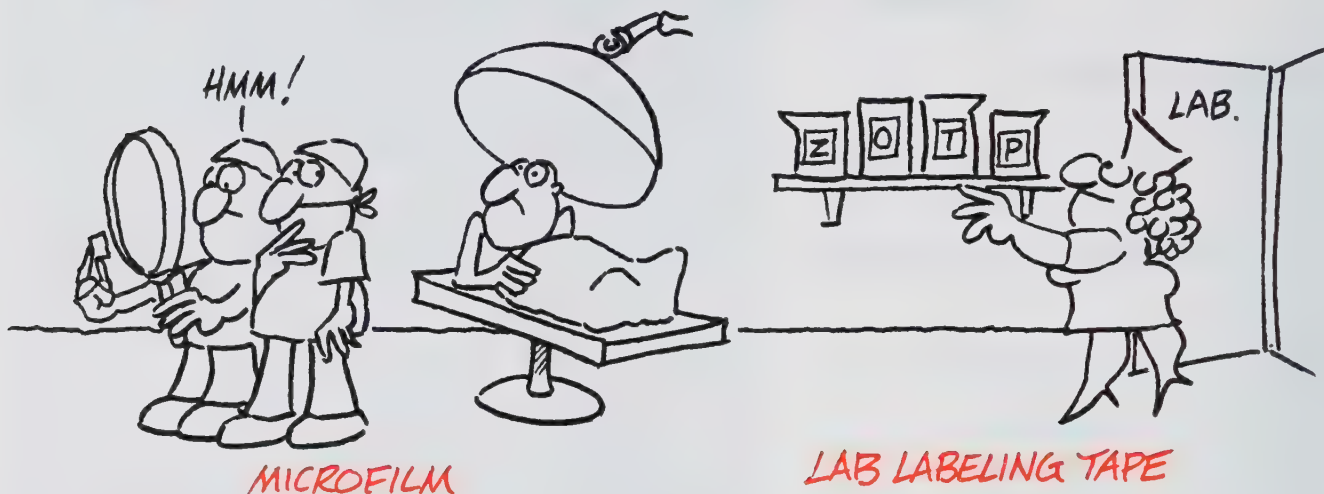
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CLINICOPATHOLOGIC STUDY OF ORAL LEUKOPLAKIA WITH EMPHASIS ON THE KERATINIZATION PATTERN

A. Platkajs, DDS, MS
Washington, D.C.

This article offers a detailed review of leukoplakia, considering the clinical features, etiology, histopathology and emphasis on the incidence of malignancy. In addition, the results of a study on 8,162 biopsy specimens in regards to leukoplakia are discussed.

Today, as in the past, a wide range of opinions exist regarding the correct use of the term leukoplakia. It is evident that the term cannot stand by itself, and whenever it is encountered it is imperative to determine in what context it is being used. That is, is it a clinical designation for a white lesion which clinically is not diagnosable, or is it a pathologic diagnosis? Consequently the World Health Organization Panel on Precancerous Lesions is advocating a definition based on that suggested by Pindborg et al¹ as "any well demarcated elevated white patch of 5 mm or more in diameter that could not be scraped off and could not be attributed to any other diagnosable disease" (e.g. candidiasis, white sponge nevus, lichen planus, etc.). It is in this context that the term will be used in this study.

The purpose of this retrospective detailed study of the clinical and histologic features of intraoral leukoplakia is to seek a correlation between the clinical and histologic features of potentially malignant and benign keratotic lesions. An attempt will be made to assess whether it is possible by studying the histomorphology of the lesion, in particular the keratinization pattern, to predict the future behaviour pattern of an oral keratotic lesion.

Early history

The term leukoplakia is derived from the Greek *leukos*, white, and *plakos*, tablet. It was first introduced in 1877 by the Hungarian dermatologist Schwimmer² in an attempt to separate certain white lesions of the oral cavity from the white mucous patches of syphilis for which it was frequently mistaken. Unlike some investigators, Schwimmer did not consider leukoplakia to be related to ichthyosis or psoriasis of the skin. Schwimmer observed that leukoplakia occurred in both the syphilitic and nonsyphilitic person, that it did not respond to antisyphilitic treatment, and that it sometimes terminated in cancer. He suggested that although syphilis may be one of the causes of leukoplakia, gastrointestinal disorders and the excessive use of tobacco should

also be considered of etiologic importance. Schwimmer believed that care of the teeth, good oral hygiene and prevention of further injury or irritation to the existing leukoplakic lesion could prevent its malignant transformation.

Some of the more common synonyms for leukoplakia found in the early literature include leukoplasia, leukoma, psoriasis linguae, buccal psoriasis, smoker's patch, ichthyosis linguae and leukokeratosis.

Clinical features

Attempts to classify leukoplakia, based on its clinical appearance have been undertaken by a number of investigators. Hobaek³ recognized two major forms of leukoplakia: "leukoplakia plana" and "leukoplakia verrucosa". The "plana" form begins as a smooth non-elevated lesion, whereas the "verrucosa" form evolves through the eventual increase in thickness and verrucous proliferation of the "plana" form.

In 1963 Pindborg et al⁴ differentiated between a "homogeneous" and "speckled" type of leukoplakia. The speckled lesion is characterized by the presence of white patches or nodules on an erythematous mucosa. The homogeneous form represents a uniformly white lesion.

Generally, leukoplakia is asymptomatic. Since there are no prodromal symptoms, most cases are discovered by the dentist during a routine dental examination. Consequently most lesions are of unknown duration to the patient.

Although there are sites of predilection, leukoplakia may occur anywhere in the oral cavity. Involvement may be unifocal or multifocal. Extent of involvement varies from small well-localized patches to large diffuse lesions. In the commissures the lesions are seen immediately inside the junction of the lips as triangular areas.^{5,6} The colour of the lesion ranges from white to grey to yellowish-white, as well as brownish-yellow when it is stained by the heavy use of tobacco; it cannot be scraped or rubbed off. Leukoplakia may be flat, elevated, fissured, ulcerated, or it may exhibit areas of erythema. Upon palpation, the verrucous and heavily keratinized or fissured lesions feel rough and dry; some may feel indurated. Smooth non-elevated lesions are non-palpable.

Nicotine stomatitis, first described by Thoma in 1941, is regarded by some as an anatomic variant of leukoplakia.⁷ It is first manifested as mucositis of the hard palate. Then, domed papules with umbilicated red areas, representing the orifices of dilated minor salivary gland excretory ducts, appear. The intervening mucosa becomes a diffuse white, increases in thickness and eventually becomes fissured or wrinkled in appearance, assuming a "parboiled" appearance.

Early literature states that leukoplakia is seldom seen in women.^{8,9} Recent studies, however, indicate that we are rapidly approaching a 1:1 male to female ratio.^{10,11} It occurs with greater frequency in persons of both sexes over the age of forty,^{5,10,12} with the vast majority of cases occurring in individuals in the fifty to seventy year age range.¹³ Many investigators state that the commonest sites of involvement are the buccal mucosa and labial commissures.^{5,10,12} Waldron and Shafer¹¹ noted that in their study approximately half of their leukoplakic lesions appeared on the mandibular alveolar ridge, mandibular gingiva or mandibular mucobuccal fold (845 cases), and buccal mucosa (736 cases).

Etiologic factors

A review of the literature indicates that a number of varied and unrelated factors, both local and systemic, are recorded regarding the etiology of leukoplakia. Early literature concentrated on syphilis as the principal systemic cause of oral leukoplakia. Statistical studies indicate that, although there is a higher incidence of leukoplakia among patients who have had syphilitic glossitis, the vast majority of leukoplakic patients are nonsyphilitics.^{5,6,7,14} Besides syphilis, the following, at one time or another, were considered to be the sole or contributing causes of oral leukoplakia: excessive use of alcohol and tobacco, chronic mechanical, chemical and microbic irritants, electrogalvanic currents, dietary deficiencies, food allergy, hyperacidity of the saliva, endocrine disturbances, hypercholesterolemia, *Candida albicans*, and in the case of leukoplakia of the lips, actinic radiation. The role of some of these factors has been negated, whereas others require further clarification.¹⁵ Only those currently considered of primary etiologic importance will be discussed in this paper.

Today the etiology of leukoplakia is still obscure. This is particularly true of "idiopathic" leukoplakia — idiopathic because a precipitating factor is not readily evident. It may be found in a healthy individual, one who has never had syphilis, one who does not drink or smoke and has a dentally fit mouth. Conversely there are individuals who have many of the precipitating factors mentioned previously but never develop leukoplakia. Obviously a constitutional tendency for keratinization⁷ is present in some individuals. This constitutional factor has yet to be identified.

Leukoplakia caused by local irritants which are capable of afflicting constant low grade injury to the mucosa is situated at the site of irritation. Statistically it has been demonstrated that a significant association between local chronic irritation and the development of oral leukoplakia

exists. The regression of many of these lesions following the elimination of the irritant is further evidence of such a cause and effect relationship. The chronicity of the irritant is more important than its nature. However, there is general agreement that the two most common contributing factors in the etiology of leukoplakia are local chronic mechanical irritants, such as faulty dental restorations and prostheses, malocclusion, sharp edges of carious teeth; and tobacco products. Mincer et al¹⁶ noted an unusually high incidence of dysplastic lesions of the mandibular mucobuccal fold alveolar ridge area in southeastern United States women who use snuff. Similar results were obtained from a combined study by Waldron and Shafer¹¹ when material from Emory and Indiana Universities was analyzed. It was noted that the Emory material, obtained almost exclusively from patients residing in southeastern United States, showed a proportionately higher total incidence of leukoplakia, a lower male to female ratio, and a considerably higher frequency of epithelial dysplasia (Table 1). Waldron postulated that perhaps the use of snuff, which is far greater in the area served by Emory University, may be responsible for the sex difference and the higher incidence of epithelial dysplasia in the Emory group. Waldron and Shafer state that their findings suggest that there may be regional differences in the incidence and character of leukoplakia within the United States.

Alcohol, because it may be irritating to the oral mucosa has been mentioned as a factor in the development of oral leukoplakia. It has yet to be determined how important a role it actually plays in the etiology of leukoplakia. Wynder et al¹⁷ believe that "the risks from tobacco and alcohol factors operate independently (i.e. the risks are approximately multiplicative)".

Since leukoplakia labialis occurs with greater frequency in people residing in sunny climates and in those engaged in an outdoor occupation, accumulated actinic radiation must be an important etiologic agent.^{17,18} A higher percentage of leukoplakias of the lower lip was observed by Mincer et al¹⁶ than by most other investigators. This inflated figure was accounted for by the fact that many of their predominantly white male patients lived in rural areas and engaged in agriculture.

Miller et al¹⁹ conducted a cytologic study to determine the keratinization pattern of various sites of normal oral mucosa of 50 young male adults, 20 to 30 years of age. The sites used were: the midline of the anterior third of the dorsum of tongue, the midline of the anterior third of the

Geographical differences in the incidence and character of leukoplakia

Table

	Incidence of leukoplakia	Female	Epithelial dysplasia
Emory	9.1%	49.7%	26.6%
Indiana	4.1%	41.6%	7.4%

ventral surface of tongue, the right buccal mucosa anterior to Stenson's duct orifice, and the labial margin of the mandibular gingiva. Using identical sites, a similar cytologic study was conducted by Stone²⁰ who used 50 males, 40 to 100 years of age with essentially normal oral mucosa. Comparison of these two studies led Stone to the conclusion that in the ageing process, the tissue of the oral cavity lacks a protective layer of keratinized cells which renders it more susceptible to mechanical, chemical or bacterial irritation. Furthermore, high risk areas (ventral tongue and floor of mouth), so-designated because of the high incidence of oral cancer in these locations, usually are not covered by keratin. Conversely, few cases of cancer appear on the dorsum of tongue and hard palate, that is, heavily keratinized areas. Another factor to be taken into consideration is that decreased salivary flow in the aged frequently results in considerable irritation to the lateral borders of the tongue when it comes into contact with teeth or prosthetic appliances. It is undisputed that the incidence of leukoplakia rises sharply with age. Einhorn and Wersall²¹ noted that 7.5 per cent of their patients 70 to 89 years of age developed carcinoma during the first five years; only 1 per cent of their patients under 50 years of age developed carcinoma in the corresponding period of time. Although age itself cannot be considered a carcinogenic agent, it is conceivable that the physiologic changes in the ageing process may contribute to "certain cancerous or precancerous predisposition".²²

As yet the role of *Candida albicans* in the etiology of speckled leukoplakia remains unanswered. It is debatable whether the presence of *Candida* is coincidental or whether chronic candidiasis is precancerous. Twenty-three leukoplakias, identified as the speckled type were examined qualitatively by cultivation and quantitatively by smear-technique for the occurrence of yeast-like fungi by Jepsen and Winther.²³ Microscopically, none of the cases showed epithelial atypism but massive invasion of *Candida albicans* was noted in all cases of speckled leukoplakia. Cultures of scrapings from these lesions demonstrated the presence of *Candida albicans* in 21 of 23 cases (91 per cent). One case of speckled leukoplakia spontaneously changed to the homogeneous type. The remaining 22 changed to the homogeneous type after antimycotic treatment with Nystatin. Jepsen and Winther²³ concluded that, since the antifungal treatment led to rekeratinization and negative cultures of the lesions, the keratolytic properties of the fungus coupled with the inflammatory reaction, which the superimposed *Candida albicans* infection either increases or solely initiates, may account for the clinical appearance of speckled leukoplakia. Road-Peterson et al²⁴ state that *Candida albicans* was present in 67 per cent of their dysplastic leukoplakias. In a retrospective histologic study of 138 leukoplakias, Cawson²⁵ noted that 15 showed the changes of chronic hyperplastic candidiasis. Subsequent examination of the records of these patients showed that of the 10 who were followed up six developed cancer. Rather than consider *Candida albicans* as a superimposed infection Cawson²⁵ drew the analogy between chronic candidiasis

and late syphilis as a cause of leukoplakia. Both are infective and "Both seem to be capable of provoking epithelial proliferation which, beyond a certain point, appears to be irreversible even after the precipitating infection is removed". Shear,²⁶ on the other hand, believes that because *Candida albicans* is not seen in every case of carcinoma-in-situ, and when seen, is present in the superficial epithelial layers only, it must be assumed to be a secondary invader.

Histopathology

The pathologic process underlying the development of leukoplakia consists of an attempt of the mucous membrane to protect its underlying layers from chronic irritation. The formation of a white patch occurs through a thickening of the keratin layer (hyperorthokeratosis) or the prickle cell layer (acanthosis) or both. A third state which is a fairly frequent finding is parakeratosis. This simply refers to the presence of a keratin layer that contains nuclear remnants. Currently it is not known what the significance of parakeratosis or orthokeratosis is. Cahn et al²⁷ state that with parakeratosis the mitotic index rises, indicating proliferative tendency in these lesions which often leads to hyperplasia, dysplasia, carcinoma-in-situ or carcinoma. On the other hand, Lever and Schaumburg-Lever²⁸ state that although "parakeratosis at one time was interpreted as being the result of a too rapid cell proliferation interfering with cellular maturation", they are now of the opinion "that a defect in cellular differentiation is the primary event".

Banoczy²⁹ in correlating the type of leukoplakia, that is, simply (homogeneous), verrucous, or erosive (speckled), with the type of keratinization, noted that orthokeratosis prevailed in the majority of the homogeneous (72 per cent) and verrucous (58 per cent) leukoplakias. Parakeratosis dominated (77 per cent) in the erosive leukoplakias. Sahiar et al³⁰ obtained similar results in their cytologic studies of oral leukoplakias.

Cahn et al²⁷ are of the opinion that dysplasia and carcinoma-in-situ occur more frequently in hyperparakeratotic lesions. Banoczy²⁹ and Pindborg et al³¹ state that the histologic characteristics of carcinoma that develop from leukoplakia showed predominantly hyperparakeratotic keratinization.

Leukoplakia may be histologically divided into those lesions which exhibit no epithelial dysplasia, and those which show variable degrees of dysplasia. Dysplasia represents an alteration in the size, shape, and organization of adult cells; these deviations from the normal may be seen as basal cell hyperplasia, increased number of mitotic figures, abnormal mitoses, increased nuclear-cytoplasmic ratio, large prominent nucleoli, loss of polarity, pleomorphism, hyperchromatism, and keratinization of single cells or groups of cells in the prickle cell layer.

Koller et al³² presented a simple classification for maturational disorders in the oral epithelium. By stating the microscopic appearance of the lesion, a discussion of what leukoplakia is, is eliminated. More important, it provides a basis for a rational plan of case management. The classification is

as follows: (1) hyperplasia, (2) hyperkeratosis, (3) hyperkeratosis and inflammation, (4) hyperkeratosis, dyskeratosis and inflammation, (5) intraepithelial carcinoma, and (6) epidermoid carcinoma.

A developing concept currently considered of importance is that epithelial atrophy of the oral mucosa may be the common denominator for all oral lesions considered to be precancerous. For example, in submucous fibrosis, the epithelium may be only several cells thick, yet a high percentage of these lesions undergo malignant change. Suprapapillary thinning of the epithelium is also evident in erythroplakia. Cooke³³ believes that "the white patch is such a striking clinical phenomenon that . . . it has preoccupied our energies out of all proportion to the studies that should perhaps be made of the accompanying atrophic mucosa". Consequently Kollar's classification should be expanded to include epithelial atrophy.

Incidence of cancer

Leukoplakia may be considered as reversible or irreversible. Those lesions which spontaneously regress after the chronic irritant has been recognized and removed are referred to as reversible. Lesions which are idiopathic in origin or which persist in spite of the elimination of the chronic irritant are referred to as irreversible. It is the irreversible lesion which exhibits the potential for malignant transformation. However, a reversible leukoplakia can recur and may be premalignant.¹⁰ Pindborg et al¹ reported that in their study, 20 per cent of the leukoplakic lesions disappeared completely, 18 per cent diminished in size and 43 per cent were not affected. Thus 61 per cent of the lesions could be classified as completely or partially irreversible. Banoczy and Csiba³⁴ compared certain histologic changes with subsequent clinical recovery. Those lesions exhibiting para- or hyperparakeratosis remained unchanged or spread in 52 per cent of the cases as compared to 27 per cent in the ortho- and hyperorthokeratotic group. These authors therefore believe that a certain correlation exists between the clinical and histologic pictures in leukoplakia.

Investigators have attempted to establish the incidence of malignant transformation in leukoplakia by:

- (a) determining the number of lesions that clinically appeared as leukoplakia but that upon histologic examination proved to be carcinoma, or
- (b) determining the number of leukoplakias associated with oral carcinoma in a significant number of patients, or
- (c) following a number of leukoplakic lesions over a long period of time to establish the incidence of malignant transformation (Table 2).

Sturgis and Lund³⁵ in a five year follow-up study of 298 cases determined that 12 per cent of the lesions underwent malignant transformation. Similar more recent long term follow-up studies show the rate of malignant transformation to be 2.4 to 6 per cent. These figures contrast with those of early investigators who had estimated malignant change as being, on the average, 25 to 30 per cent. Cooke³⁶ attributed this reduction to a decrease in syphilis as well as improved nutrition, oral hygiene, and dental care.

Follow-up studies of leukoplakias have indicated that a significant portion, if not the majority, of lesions which become malignant do so within the first year.^{1, 10, 21} Pindborg et al¹ agreed that, taken as an entity, leukoplakia is a lesion of great chronicity. However, because five of the 11 patients in his study developed carcinoma within the first year after examination, he suggested that malignant transformation of leukoplakia may run a rapid course. Furthermore, a greater rate of malignant transformation was observed in nonsmokers and women.^{6, 37} In a five-year study, Einhorn and Wersall²¹ noted that, although the incidence of leukoplakia was much greater in tobacco-users, the incidence of carcinoma in nonsmokers with leukoplakia was nearly eight times greater. A number of investigators have observed that females have a greater risk of developing carcinoma from leukoplakia. Banoczy and Sugar⁶ observed a female to male ratio of 7.2 to 5.5 per cent, whereas Roed-Petersen³⁷ observed a more striking female to male ratio of 5.8 to 2.1 per cent. Banoczy and Sugar⁶ noted that a total of 88.8 per cent of the tongue cancer cases were women, giving a ratio for tongue cancer in the male to female group of 1:2, while the ratio for carcinoma in the

Percentage of previously benign leukoplakias that eventually became malignant

Table 2

Year and author		Initial No. of cases	Incidence of malignant transformation	Observation period (yrs.)
Einhorn and Wersall	1967	782	2.4%	10
Einhorn and Wersall	1967	782	4.0%	20
Pindborg et al.	1968	248	4.4%	9 (3.7 median)
Silverman et al.	1968	117	6.0%	11
Roed-Petersen	1971	422	3.6%	4.5 (median)
Sugar and Banoczy	1972	520	5.9%	25 (8.7 mean)

total number of patients was 2.5 to 1. Based on data accumulated over a 25 year follow up period, Banoczy et al concluded that if certain features are present, there is a higher risk for malignant transformation. These features are: (1) persistence of the lesion for some years, (2) lesion situated on the margin or base of the tongue, (3) female patient, (4) a combination of irritants, and (5) erosive lesion.

The white lesion has been implicated as being the most common precancerous lesion of the oral cavity.³⁸ Bhaskar³⁸ states that untreated dysplastic leukoplakias of the floor of the mouth and base of the tongue become invasive cancer more than 90 per cent of the time. Some investigators have indicated that the verrucous, fissured or markedly thickened leukoplakias were most likely to become malignant.³⁹ More recently it has been demonstrated that the majority of lesions exhibiting dysplasia or malignant change appear clinically as speckled leukoplakias. Pindborg and associates,³¹ in their 1963 study of 35 speckled leukoplakias, noted that epithelial atypism was found in 51 per cent and invasive carcinoma in 14 per cent of the cases.

Based on an extensive investigation of asymptomatic oral squamous cell carcinomas, Mashberg and co-workers⁴⁰ deduced that erythroplakia is the most severe of the oral precancerous lesions. Of the 158 lesions, 46 (29 per cent) were diagnosed as carcinoma-in-situ and 112 (70.9 per cent) were invasive. Erythroplakia was present in 43 (93.5 per cent) of the carcinomas-in-situ. Thirty-three (71.7 per cent) of the carcinomas-in-situ had a keratotic component. Of the 158 lesions, only four (2.5 per cent) exhibiting dysplasia were solely white; two of the non-erythroplastic carcinomas-in-situ occurred on the lip. Since an overwhelming number of primarily white lesions were histologically benign with minimal or no atypia, the investigators expressed the view that the presence of a white component did not appear to be significant unless it was accompanied by erythroplakia.

These authors noted that 58.9 per cent of the invasive intraoral lesions were granular or rough, as opposed to 34.8 per cent of the in-situ lesions. Thus they suggest that a granular or rough surface is an added factor in arousing suspicion concerning the malignant character of an asymptomatic erythroplastic lesion, and that an erythroplastic lesion which is granular, ulcerated, indurated or elevated is more likely to be an invasive carcinoma than carcinoma-in-situ.

From their data they concluded that an asymptomatic, small (2 cm or less), erythroplastic lesion with or without keratotic components in the floor of mouth, soft palate, or ventral and lateral tongue is highly suspect. These sites were designated as high risk areas.

In a combined study by Shafer and Waldron,⁴¹ data regarding homogeneous erythroplakia from both Emory and Indiana Universities was evaluated. Of 58 cases of oral erythroplakia, 91 per cent of the specimens were either invasive carcinoma, carcinoma-in-situ, or severe epithelial dysplasia. It was also noted that homogeneous erythroplakia

has no apparent sex predilection (31 males and 27 females) and is most common in the sixth and seventh decades of life. This is in contrast to leukoplakia where there is a predilection for occurrence in males and where occurrence in the fourth and fifth decades is common. Since erythroplakia constituted only 0.09 per cent of the 64,354 cases accessioned, it was assumed to be far less common than leukoplakia. However, Mashberg and co-workers⁴² found that once they had defined the site, colour and surface criteria for these predominantly red lesions, greater emphasis was placed in examination of these high risk areas with the result that the annual recognition rate increased from two cases in 1960 to 28 in 1974. Shafer and Waldron⁴¹ noted that the vast majority of these small homogeneous red lesions were frequently overlooked by the dentist; when detected, most were considered to be innocuous inflammatory processes. To summarize: leukoplakia is certainly pre-invasive, speckled leukoplakia is still more so, and erythroplakia is often an invasive carcinoma.

Methods and materials

The files of the tissue diagnostic service of the Department of Oral Pathology, Georgetown University School of Dentistry, from the years 1958-1976 were utilized in this analysis.

Case histories submitted with the tissue specimen were reviewed and only those lesions which were clinically described as leukoplakia, speckled leukoplakia, keratosis, or white patch were selected for inclusion in this study.

The cases were analyzed as to sex, age of occurrence, clinical appearance of lesion, site of involvement, whether involvement was unifocal or multifocal, and the histomorphology. Relevant etiologic factors such as the use of tobacco, alcohol consumption, syphilis, and the occurrence of mechanical irritants were recorded when such information was provided by the clinician. However, since the submitted data regarding possible contributing factors varied greatly in detail from contributor to contributor, this information was considered insufficient for a meaningful analysis. The anatomical sites recorded were upper and lower lip, buccal mucosa and commissures, tongue, floor of mouth, retromolar area, hard and soft palate, maxillary alveolus and sulcus, and mandibular alveolus and sulcus.

Hematoxylin and eosin stained sections of all leukoplakias used in this study were reviewed and divided into two categories: those lesions in which epithelial dysplasia was present, and those in which epithelial dysplasia was not evident. In this study, for the sake of convenience, the former category will be referred to as "dysplastic leukoplakia", and the latter category as "benign leukoplakia".

The histopathologic changes occurring in the epithelium were recorded as follows:

- (a) Pattern of keratinization — this was recorded as normal or deficient for the site biopsied. When the thickness of the stratum corneum exceeded that normally characteristic for that area, the change was recorded as hyperorthokeratotic, hyperparakeratotic or a combination of

hyperorthokeratotic and hyperparakeratotic.

- (b) Presence or absence of stratum granulosum.
- (c) Epithelial thickness — this was recorded as normal, atrophic, acanthotic, or a combination of atrophic and acanthotic.
- (d) Dysplasia — epithelial dysplasia was recorded when two or more of the following features were present: basal cell hyperplasia, increased number of mitotic figures, abnormal mitoses, increased nuclear-cytoplasmic ratio, loss of polarity, pleomorphism, nuclear hyperchromatism, nuclear polymorphism, large prominent nucleoli, and keratinization of single cells or groups of cells in the prickle cell layer. Each of these features was recorded as absent, slight, moderate, or marked.
- (e) Inflammatory cell infiltrate — if an inflammatory cell infiltrate was present in the epithelium, a record was made of the intensity of the infiltrate and the type of cell present. An area in which the inflammatory cells in the epithelium were most numerous was selected. The infiltrate was recorded as none to slight, moderate, or severe.

The histopathologic changes occurring in the supporting fibrous connective tissue were recorded as follows:

- (a) Distribution and density of the inflammatory cell infiltrate in the lamina propria — the connective tissue infiltrate was considered in two zones, the papillary layer and the reticular layer. For each zone the type and intensity of the inflammatory infiltrate were recorded. The intensity was recorded as none to slight, slight to moderate, or severe.
- (b) Basement membrane — immediately subjacent to the basal epithelial cells there is a well defined band of material which is markedly more PAS-positive than the subjacent connective tissue. In normal oral mucosa this forms a thin continuous line. When a thickening of the basement membrane was noted, this was recorded. Areas of discontinuity of the basement membrane were also recorded.

Results

The Georgetown University Department of Oral Pathology received 8162 biopsy specimens for microscopic examination during the period 1958 to 1976. Of these, 764 (9.4 per cent) were diagnosed as benign or dysplastic leukoplakias. In 114 cases the clinical data submitted by the contributors were considered insufficient for a meaningful analysis. This reduced the number of cases from 764 to 650. Of these, 559 (86 per cent) represented benign lesions and 91 (14 per cent) showed some degree of epithelial dysplasia.

Tables 3 and 4 illustrate the distribution of leukoplakia according to age and sex. It is evident that the prevalence of leukoplakia increases in both sexes after the age of 40. In benign leukoplakia the greatest incidence of occurrence is in the 51 to 60 year age range, whereas in the dysplastic

Distribution of dysplastic leukoplakia according to age and sex

Table 3

Age	Male	Female	Total	%
21-30	1	0	1	1
31-40	5	3	8	9
41-50	9	8	17	19
51-60	11	12	23	25
61-70	16	10	26	29
71-80	9	4	13	14
81-90	3	0	3	3
Total	54 (59%)	37 (41%)	91	100

Distribution of benign leukoplakia according to age and sex

Table 4

Age	Male	Female	Total	%
11-20	2	0	2	1
21-30	11	10	21	4
31-40	28	28	56	10
41-50	33	29	62	11
51-60	107	90	197	35
61-70	90	55	145	26
71-80	40	30	70	13
81-90	5	1	6	1
Total	316 (57%)	243 (43%)	559	100

leukoplakia the greatest incidence of occurrence is in the 61 to 70 year range.

It is apparent from Table 5 that 64 per cent of the dysplastic leukoplakias are located on the tongue (30 per cent), floor of mouth (22 per cent) and buccal mucosa (12 per cent). All other sites constitute 36 per cent.

Table 6 shows that 59 per cent of all the benign leukoplakias are located on the buccal mucosa and commissures (22 per cent), mandibular alveolus and sulcus (21 per cent) and hard palate (16 per cent). All other sites constitute 41 per cent of the benign leukoplakias.

Analysis of the data regarding the distribution of leukoplakia according to age and sex is summarized in Table 7, which indicates that there was no significant correlation between the sex of the patient and age at biopsy diagnosis. However, it was noted that benign leukoplakia occurs in a

Distribution of dysplastic leukoplakia according to sex and location*

Table 5

Location	Total		Male		Female	
	No.	%	No.	%	No.	%
Upper lip	0	0	0	0	0	0
Lower lip	7	7	5	71	2	29
Buccal mucosa and commissures	13	12	8	62	5	38
Tongue	31	30	9	29	22	71
Floor of mouth	23	22	14	61	9	39
Retromolar area	4	4	2	50	2	50
Hard palate	2	2	1	50	1	50
Soft palate	8	8	5	63	3	37
Maxillary alveolus and sulcus	8	8	5	63	3	37
Mandibular alveolus and sulcus	9	9	5	56	4	44
Total	105		54		51	

Total number of sites is greater than total number of cases due to multi-focal involvement.

Summary of Tables 3 and 4

Table 7

	Leukoplakia	
	Benign	Dysplastic
Average male age (yrs.)	53	57
Average female age (yrs.)	54	58
Percentage over age 40	86	90
Percentage male	57	59
M:F ratio	4:3	3:2

slightly younger age group in both sexes than dysplastic leukoplakia. The sex distribution in the benign leukoplakia group was 316 males to 243 females, providing a M:F ratio of 4:3; whereas in the dysplastic group, the sex distribution was 54 males to 37 females, providing a M:F ratio of 3:2.

When the site of the lesions was compared with the sex of the patients, it was evident that there was a definite preponderance of dysplastic leukoplakias on the tongue in females (71 per cent) and on the lower lip (71 per cent) in males.

Table 8 illustrates the type of keratinization in leukoplakia. Of 23 severe dysplastic leukoplakias, 16 (70 per cent) showed only parakeratosis and seven (30 per cent) showed a combination of orthokeratosis and parakeratosis. In no case was just orthokeratosis present in the severe dysplastic leukoplakic lesion. Of 590 benign leukoplakias 372 (63 per cent) showed only orthokeratosis, 194 (33 per

Distribution of benign leukoplakia according to sex and location*

Table 6

Location	Total		Male		Female	
	No.	%	No.	%	No.	%
Upper lip	0	0	0	0	0	0
Lower lip	26	4	26	100	0	0
Buccal mucosa and commissures	127	22	73	57	54	43
Tongue	68	12	31	46	37	54
Floor of mouth	57	10	26	46	31	54
Retromolar area	32	5	16	50	16	50
Hard palate	94	16	63	67	31	33
Soft palate	15	3	10	67	5	33
Maxillary alveolus and sulcus	47	8	27	57	20	43
Mandibular alveolus and sulcus	125	21	68	55	56	45
Total	590		340		250	

*Total number of sites is greater than total number of cases due to multi-focal involvement.

Type of keratinization in leukoplakia

Table 8

Epithelial dysplasia	Para-keratosis		Ortho-keratosis		Para- and orthoker.		Total
	No.	%	No.	%	No.	%	
Severe	16	70	0	0	7	30	23
Moderate	24	73	1	3	8	24	33
Slight	19	39	7	14	23	47	49
None (Benign leukoplakia)	194	33	372	63	24	4	590

cent) showed only parakeratosis and 24 (4 per cent) showed both types of keratinization.

Table 8 and Figure 1 indicate that parakeratosis, hyperplasia and subepithelial inflammation were more prevalent in dysplastic leukoplakias. Significant correlations between the amount of inflammation, degree or type of keratinization and degree of dysplasia were not evident. Orthokeratosis with the presence of a granular layer prevailed in the benign leukoplakias. Parakeratosis in association with acanthosis was seen more frequently than hyperkeratosis with acanthosis.

Discussion

The fact that leukoplakia represents 9.4 per cent of all oral specimens processed by our tissue diagnostic service is indicative of the clinical extent and seriousness of this

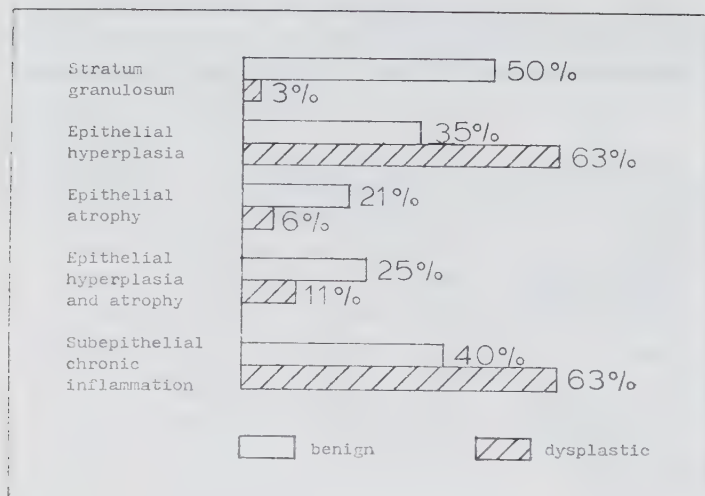


Fig 1 Histologic changes in oral leukoplakia.

lesion. Of interest is the fact that leukoplakia now is only slightly more prevalent in the male. It is apparent that there is a definite increase in the occurrence of leukoplakia in both sexes over the age of 40, with the vast majority occurring in individuals 50 to 70 years of age.

One plausible explanation for the increased incidence of leukoplakia in the older individual may be that in senescence the mucosa may present changes which are comparable with those observed in other tissues, that is, they may become atrophic.⁴³ In some individuals this atrophy is quite pronounced; the atrophic mucosa may be identified by its smooth, shiny, satin-like appearance. Atrophic mucosa is subject to excoriations and ulcerations from the slightest trauma or infection. Cooke³³ believes that the etiology of this atrophy is more important than the etiology of the superimposed white patch. He states that "whereas rarely are carcinomata arising from white patches seen in the mouth, apart from the lips, there are few carcinomata which are not associated with an atrophic mucosa".

The seriousness of an atrophic mucosa was recognized by Hertz²² when he wrote that after leukoplakia "the next main clinical group of precancerous changes in the oral mucosa is constituted by certain atrophic changes" and "cases of erythroplasia, leukoplakia and atrophy must be carefully watched".

Stone's study²¹ also may, in part, explain the increased incidence of leukoplakia in the elderly. He believes that in the ageing process the tissue of the oral cavity may lack a protective layer of keratinized cells which renders it more susceptible to mechanical, chemical or microbic irritants.

The protective role of keratin is apparent when it is noted that, although the keratinized areas of the oral cavity (gingiva, dorsum tongue and hard palate) are the most traumatized areas of the oral cavity, few cases of dysplastic leukoplakia are noted in these locations. However, the opposite is true of the nonkeratinized 'high risk' areas, which, although seldom traumatized, have the highest incidence of

dysplastic leukoplakia and carcinoma.

A significant number of leukoplakias in this study exhibited potentially serious epithelial alterations. This was particularly true of the leukoplakias located on the ventrolateral surface of the tongue and floor of mouth, that is, in high risk areas. One cannot assume that leukoplakia, with or without epithelial dysplasia, is the usual or inevitable preliminary stage of invasive carcinoma. However, the correlation between the location of leukoplakia, whose histopathology shows evidence of cellular dysplasia, and the location of oral cancer cannot be overlooked. Furthermore, recent time-related studies indicate that 2.4 per cent to 6 per cent of patients with leukoplakia will develop cancer, thus confirming the belief that leukoplakia in some individual represents a pre-invasive lesion.

The characteristics of epithelial dysplasia have been well defined. However, the interpretation of these criteria is largely subjective. Kramer et al⁴⁴ has undertaken the task of computerizing the histologic criteria of oral premalignancy. This computer-aided analysis may aid in identifying those lesions in which the risk for malignant transformation is greatest.

The histopathologic structure of oral lesions is and has been the focus of many studies. Only recently, however, has it been realized that the study of the type of keratinization present may prove to be of significance.

Histologic evaluation of the epithelial surface of the biopsy specimens used in this study revealed that in a significant number of dysplastic lesions the epithelial surface was covered by parakeratin, and less frequently by both parakeratin and keratin. However it was noted that, in sections where both types of keratinization were present the epithelial dysplasia was confined frequently to the parakeratotic region. The leukoplakias in which no epithelial dysplasia was apparent were covered solely by orthokeratin in almost two-thirds of the cases. This finding assumes importance when one notes from other studies^{12,31} that a majority of cancers originate from the speckled type of leukoplakia; parakeratosis is the dominant type of keratinization seen in most speckled leukoplakias.

Due to an appreciable percentage of false negative results, many are of the opinion that, diagnostically, oral exfoliative cytology is of little value. However, the type of keratinization can be determined with some degree of accuracy by cytologic methods²⁹ and may yet prove of value to the clinician in identifying and differentiating parakeratotic leukoplakias from the more innocuous orthokeratotic leukoplakias.

Conclusions

The vast majority of leukoplakias occur in individuals 50 to 70 years of age. In this study the histologic findings emphasized the serious nature of the disease, since 14 per cent of the leukoplakia specimens revealed variable degrees of epithelial dysplasia. It was noted that in both sexes benign leukoplakia occurs in a slightly younger age group than does dysplastic leukoplakia. More than half the dys-

lastic lesions were located in "high risk" areas, that is, the ventral surface of the tongue and floor of mouth. There was a definite preponderance of dysplastic leukoplakias on the tongue in females.

In this study it was noted that in a significant number of dysplastic lesions the epithelial surface was covered by parakeratin. Furthermore a number of investigators have suggested that there is a greater incidence of malignant transformation in parakeratotic leukoplakias than in orthokeratotic leukoplakias. Therefore further study of the keratinization patterns in oral leukoplakias should be pursued. A correlation between the type of keratinization and the incidence of malignant transformation may prove to be of prognostic significance and may influence the mode of treatment. The recent concept that mucosal atrophy may be the common denominator in "precancerous" lesions also warrants further investigation.

"A white patch that cannot be assigned on the basis of clinical and laboratory findings to any diagnostic category is designated as leukoplakia."³¹ This definition, by exclusion, emphasizes the unfortunate fact that, although much has been published about leukoplakia, there is still a paucity of factual material.

Dr. Platkajs is assistant professor, School of Dentistry, Department of Oral Pathology, Georgetown University, Washington, D.C. 20007.

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UNSUSPECTED RHINOLITH

A. Ruprecht, DDS, MScD, FRCD(C)

C. M. Wang, MB(Dent)

Saskatoon

D. Rak, DMD

Calgary

A case of unsuspected rhinolith found on a Panorex film taken for a dental evaluation is presented. The etiology and clinical manifestations of rhinoliths are discussed.

Many of the body organs in which there is secretion of fluid or semi-fluid are prone to the formation of stones. In the region of the oral cavity, the most common such concretions, sialoliths, are found in the salivary glands and ducts. There are, however, other areas in which stone formation can occur which are of interest to the dentist.

The nasal passage and maxillary sinus are two such areas in which it is possible to find concretions. These may be symptomless or give rise to chronic nasal irritation and a foul odour or discharge.¹ Rarely they may cause epistaxis.² Such stones are termed rhinoliths in the nose, and antroliths in the maxillary antrum. Because of their interest to the dentist, the following case is presented.

C. M., a 30 year old female, was admitted to the University Hospital for vaginal hysterectomy and repair. While in the hospital, she was referred to the hospital dental department for evaluation of dental caries.

A Panorex film taken during the investigation revealed severe dental disease and a calcified mass in the nose (Fig 1). The occlusal film (Fig 2) confirmed the finding on the Panorex. This was interpreted as a rhinolith. The patient was entirely unaware of the mass and had no signs or symptoms. She was referred to the E.N.T. Department where the mass was removed, in fragments, under local anaesthetic (Fig 3). The pathology report indicated a greyish, calcareous mass consistent with rhinolith. No histopathological report was made.

Discussion

Concretions are a fairly common occurrence in the oral cavity due to calculus deposited on teeth in the regions of openings of salivary gland ducts. Stones can also develop within these ducts or the glands themselves. Some stones

may be radiolucent because they have not become mineralized yet and thus are not found on radiographs unless contrast techniques are used. Radiopaque sialoliths are, however, found on routine radiologic examination. While less common, calcific deposits may also be found in neighbouring air passages. If small, these stones may be symptomless and may appear on films taken by the dentist for unrelated reasons. Larger stones may give symptoms of sinusitis or a cold, as well as nasal obstruction, running nose and signs of infection. If not found when small, the masses may lead to destruction of neighbouring structures, such as the nasal septum.³

Rhinoliths are more common in adults than in children, and occur more frequently in females than in males.^{4, 5} They are the result of calcium deposits on a mucous plug, or on gauze or cotton which may have been used to stop haemorrhage.^{6, 7}

The radiologic appearances vary from a faintly radiopaque mass to a pronounced radiopaque entity. The stone may be homogeneously white or show a layering of mineralization. There may be areas of radiolucency scattered throughout the mineralization.⁸

Antroliths may be confused with antral projections. Careful evaluation of the area may reveal that the antral projection is continuous with the bone of the antral wall.

Because patients see their dentist more regularly than their physician and because radiographs are taken in this area more often by the family dentist, many of the stones should be found by the dentist when still small, before any serious destruction occurs.

Dr. Ruprecht is associate professor and head, Department of Diagnosis and Oral Radiology, College of Dentistry, University of Saskatchewan, Saskatoon, Sask.

Dr. Wang is departmental assistant, Department of Diagnosis and Oral Radiology, College of Dentistry, University of Saskatchewan.

Dr. Rak is in private dental practice in Calgary, Alberta.

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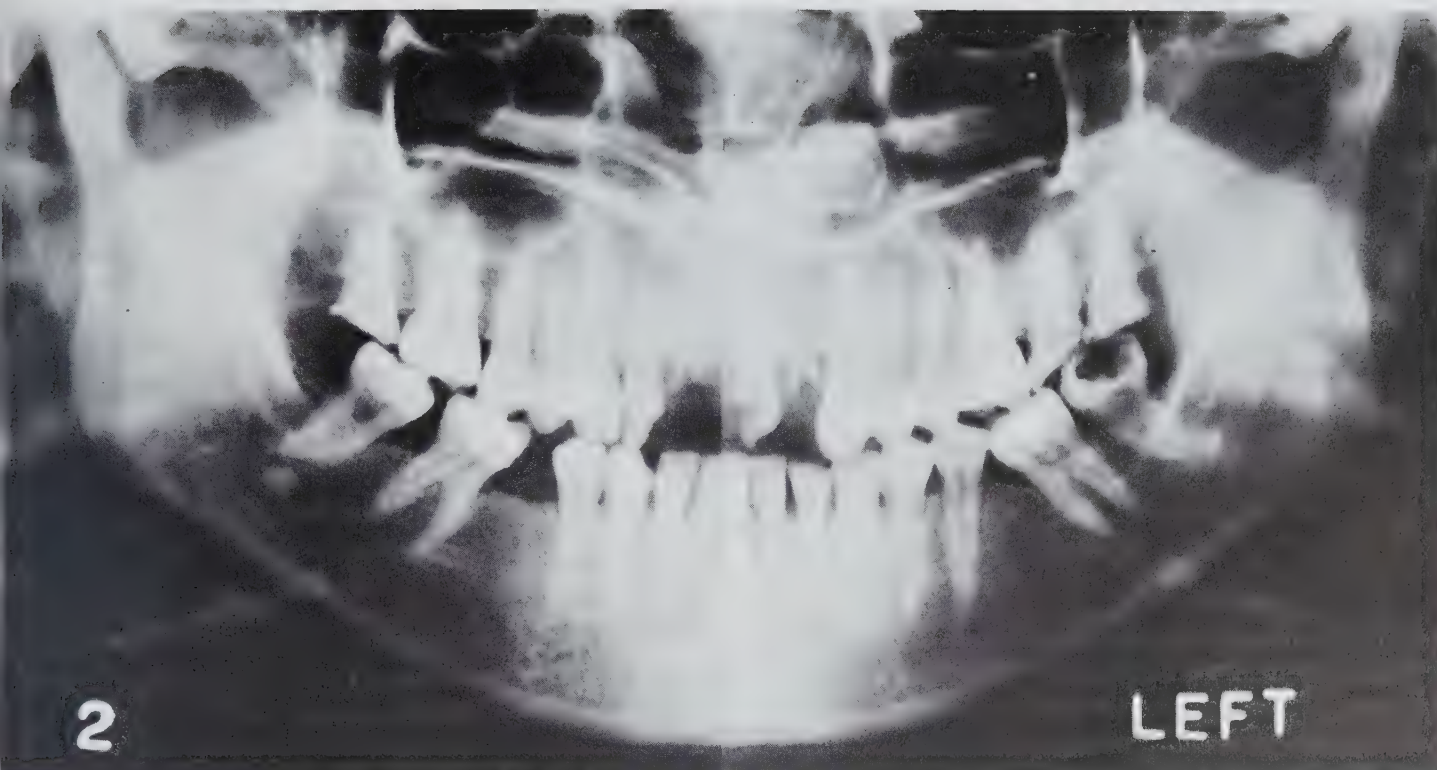


Fig 1 A Panorex film taken for the detection of dental disease revealed a radiopaque mass in the nose, highly suggestive of rhinolith.



Fig 2 An occlusal film confirms the radiologic impression of rhinolith

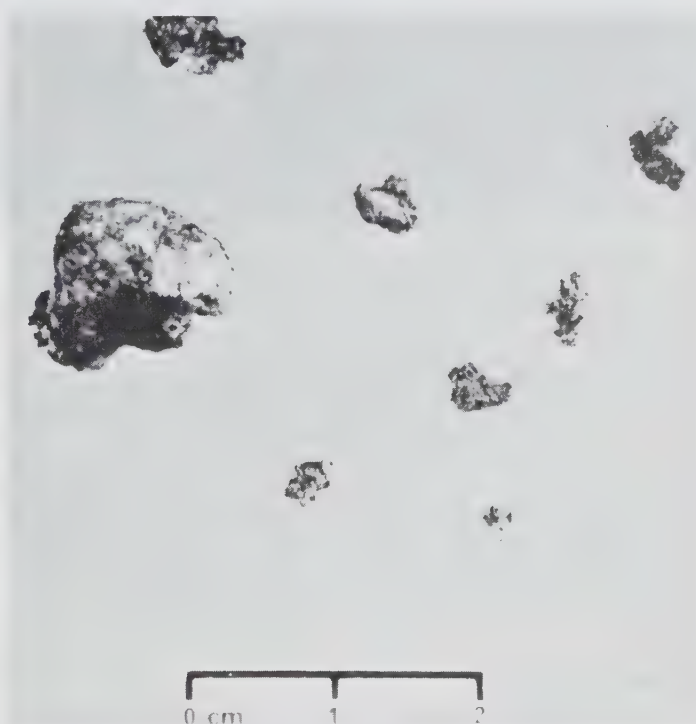


Fig 3 The rhinolith, after being removed in fragments.

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FACIAL PAIN: REPORT ON A MULTIDISCIPLINARY APPROACH

A. J. Camarda, DDS
Montreal

Robert P. Langlais, DDS, MS
San Antonio, Texas

Four cases of facial pain diagnosed as myofascial pain dysfunction syndrome (MPDS), either singly or in conjunction with other disease entities, are presented, each having a chief complaint of pain and discomfort in and about the temporomandibular joints and pre-auricular areas. The need for a comprehensive multidisciplinary approach to the establishment of an accurate diagnosis of facial pain symptomatology is discussed. The importance of investigating all body systems which may be contributing to the symptom complex is emphasized, and relief of pain and treatment of the MPDS component should come first in the treatment plan. A multidisciplinary re-evaluation should follow this treatment phase prior to contemplating any irreversible treatment for persisting symptoms or disease.

Four cases of facial pain are presented for discussion, each having a chief complaint of pain and discomfort about the pre-auricular and temporomandibular joint areas. This article focuses on the necessity to differentiate between myofascial pain dysfunction (MPD) and other types of pain which may accompany or mimic the MPD syndrome. The following four case reports have been selected from the many patients with facial pain who have been examined in the dental clinic at St. Mary's Hospital, Montreal, by the author (A.J.C.), and who have participated in the MPDS project.

Case 1

In July 1977, a 33 year old male Caucasian presented with a complaint of crepitus and pain of four months' duration in both temporomandibular joints. On questioning, the patient revealed a history of jaw clenching, bilateral intra-auricular pain, frequent neck aches, pain in and about the right shoulder and back, as well as chronic frontal and maxillary sinusitis. Otherwise, the patient was in good physical health. The extra-oral head and neck examination elicited minor to moderate spasm of the right and left temporalis, medial pterygoid, masseter, trapezius and posterior cervical muscle groups. Bilateral temporomandibular

joint (TMJ) crepitus accompanied by "popping" of the right TMJ was elicited on vertical jaw opening. There was no limitation or deviation of vertical mandibular movement; moreover, intra-oral examination revealed healthy soft and hard tissues, with the dentition intact except for the absence of the four second and four third molars due to previous extractions. There was thermal sensitivity of the maxillary posterior teeth due to the chronic maxillary sinusitis. Occlusal analysis revealed an Angle Class I bilateral molar and cuspid malocclusion with a 40 per cent overbite and a 1-2 mm overjet. Functional dental examination showed a bilateral cuspid rise, no balancing contacts and an apparently harmonious centric relation and centric occlusion.

Radiology — The Panoramic view along with bilateral trans-cranial and trans-orbital views revealed an increased posterior joint space on the right side in the closed position (Fig 1A).¹³ The right and left open jaw positions showed equal forward movement of the condyles, confirming the clinical finding of no deviation on vertical jaw opening (Fig 1B).

Diagnostic impression — A diagnosis of myofascial pain dysfunction syndrome (MPDS) was made, with the parafunctional habits being jaw clenching and dental bruxism.

Treatment plan and follow-up — Treatment involved explaining the tension related etiology to the patient,¹ subjective voluntary restriction of his parafunctional jaw and dental habits, along with a referral to the Department of Psychology for tension control training via the biofeedback technique.² Following several sessions of conservative management, the patient is free of his chief and associated complaints to date. Presently, a protective, clear acrylic maxillary night guard to aid in controlling some recurrent nocturnal bruxism is being considered.

Case 2

In December 1977, a 28 year old Chinese woman was referred by her orthopaedic surgeon regarding severe pain of the left temporomandibular joint and pre-auricular areas of four months' duration. Upon questioning, the patient revealed that she suffered from anxiety and migraine head-

Fig 1 Right temporomandibular joint — trans-cranial views:

1. Jaw closed (habitual centric occlusion). Note the increased posterior joint space (arrow A) as compared to the anterior joint space (arrow B). This reflects an abnormal closed condylar position.
2. Jaw open: the head of the condyle (arrow C) has moved anteriorly to the articular eminence (arrow D). This reflects a normal open condylar position.

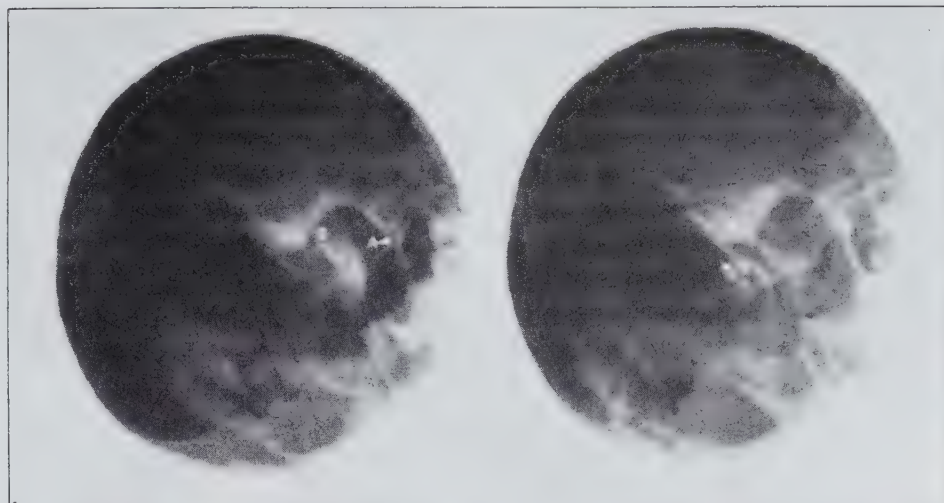


Fig 1A

Fig 1B

Fig 2 Panoramic view. There is evidence of both direct and indirect restorative dental treatment. The supporting tissues are in good overall general health, with moderate localized periodontal breakdown. There is a definitive flattening and irregularity of the antero-superior surface of the right condyle (arrow A). A radiolucent osteolytic depression of the antero-superior portion of the left condyle is also evident (arrow B).



aches, insomnia, frequent acetylsalicylic acid* intake and occasional lower back pain. The patient was aware of clenching her jaws on occasion.

Extra-oral examination revealed no muscle spasm or trismus. Upon auscultation, there was bilateral TMJ crepitus in both the immediate (hinging) and extended (translating) condylar movements. The left TMJ was extremely tender to palpation. Mandibular opening was limited to an inter-incisal distance of 28 mm. On opening, there was a mandibular deviation to the left, then to the right. Although crepitus was present, a vague complaint of dysphagia associated with left auricular "popping" could not be confirmed at the time of examination. Intra-oral soft and hard supporting tissue examination revealed moderately healthy periodontal and dental tissues. Occlusal and functional dental analysis could not be evaluated due to the severe limitation of jaw movement. However, a deeply carious buccal lesion of the lower right second molar was subsequently treated.

Radiology — Routine bilateral TMJ radiographs revealed definitive degenerative changes along the anterior articulating aspects of both mandibular condyles, with the changes being more marked on the left. These findings were

confirmed through tomography (Figs 2, 3 and 4).

Consultation — A complete skeletal survey revealed no evidence of synovitis in any other body joint. Latex fixation test for rheumatoid factor proved negative.

Diagnostic impression — A diagnosis of chronic myofascial pain dysfunction syndrome with concomitant degenerative bilateral TMJ osteoarthritis was proposed. A subsequent appropriate long-range three-stage treatment plan was initiated. This included: (1) short-term (7-10 days) treatment with muscle relaxant and anti-inflammatory medication; (2) long-term (1-2 years) treatment with acetylsalicylic acid* and possibly a series of not more than two intra-articular steroidal injections, at not less than six month intervals; (3) if such a conservative treatment failed or rendered little relief, temporomandibular joint surgery should be performed. Following the first phase, the patient had mild improvement after a two-week regimen of chlorzoxazoneacetaminophen† followed by a 10-day regimen of indomethacin‡. The patient was then lost to follow-up due to a move away from the province.

*Aspirin (Bayer Company Canada Limited, Aurora, Ont.)

†Parafon Forte (McNeil Laboratories Limited, Don Mills, Ont.)

‡Indocid (Merck, Sharp & Dohme Limited, Montreal, Que.)

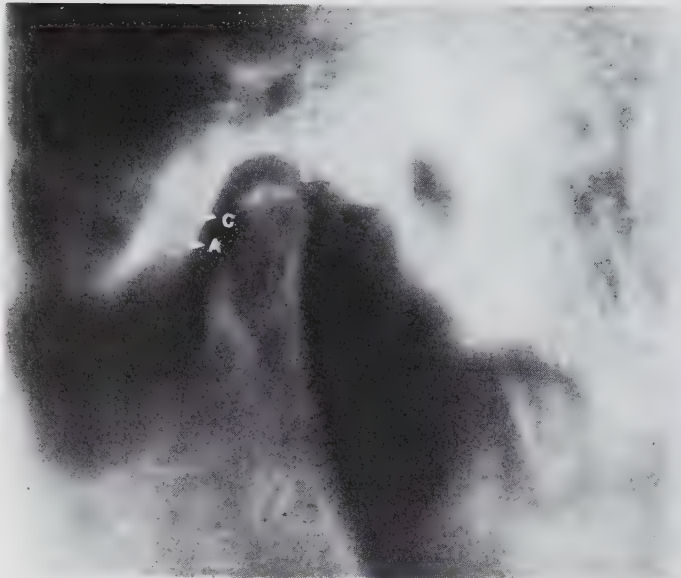


Fig 3 Right temporomandibular joint tomogram. (1.5 mm). Jaw closed (habitual centric occlusion): in this view, the lamina dura may be more accurately assessed. Note the distinct thinning of the lamina dura anteriorly and posteriorly, as well as the perforation anteriorly (arrows A, B, C, respectively). There is a marked "lipping" of the anterior condylar surface suggesting earlier spur formation. A marked overall asymmetry of the condylar head is noticeable with a slight radiolucency of the posterior surface of the condylar head. The lamina dura of the glenoid fossa remains intact.

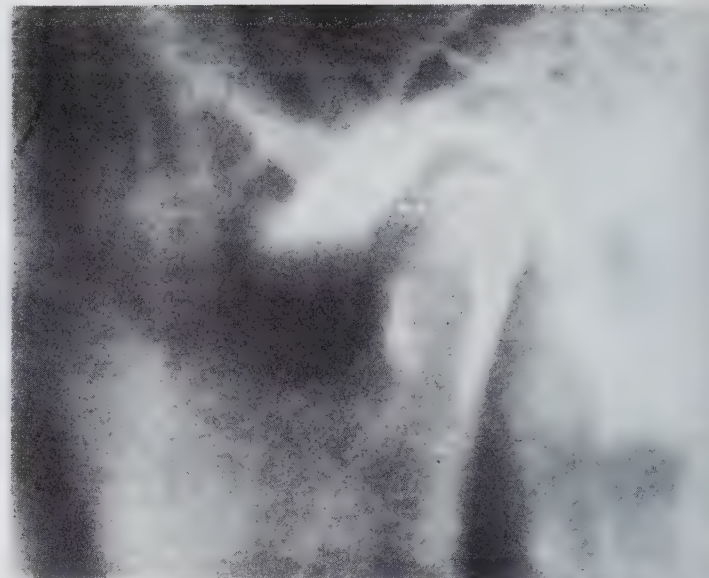


Fig 4 Left temporomandibular joint tomogram (1.0 mm). Jaw closed (habitual centric occlusion): a surface irregularity of the condyle is present. There is evidence of "depression" of the condyle anteriorly with perforation of the condylar lamina dura (arrow A).

Case 3

In February 1977, a 27 year old woman presented with the chief complaint of severe, subjectively disabling bilateral pain with crepitus in the TMJ areas. The patient had first become aware of her symptoms at 15 years of age, during which time she was undergoing extensive dental treatment. Temporomandibular joint pain became so severe at age 21 that a bilateral meniscectomy was performed. Relief was immediate but short-lived and the patient returned to her previous state. Questioning also revealed an associated history of bilateral intra-auricular and peri-orbital "soreness", tension headaches, limited mouth opening, pain in and about the right shoulder, neck and lower back areas, as well as a history of chronic ingestion of a number of drugs, primarily, propoxyphene napsylate* and oxazepam†.

Extra-oral head and neck examination revealed moderate spasm of the right and left temporalis and splenius capitis muscles. Bilateral TMJ crepitus was audible (without auscultation) in the immediate range of jaw movement. Concomitant severe joint pain was noted bilaterally in all mandibular movements beyond the initial range. There was a restricted inter-incisal jaw opening of approximately 28 mm (normal range: 45-60 mm), and a deviation of the mandible to the right on vertical opening was noted. Intra-oral examination revealed a moderately healthy state of supporting soft and hard tissues. The patient was edentulous, with apparent physiologically acceptable function of the complete upper and lower dentures. Her bilateral TMJ

pain worsened in cold, damp weather. No other body joint pain was elicited on investigation.

Radiology — The Panoramic radiograph along with bilateral TMJ, trans-cranial and trans-orbital views revealed an abnormal flattening of the superior aspects of both condylar heads, with decreased intra-articular joint spaces concomitant with bilateral meniscectomy. These findings are consistent with a radiographic diagnosis of degenerative inflammatory disease (Fig 5).

Consultation — Psychiatric evaluation indicated that the patient required further investigation regarding diagnosis of and treatment for a probable masked depression.⁸ The specialist in charge suggested that "... such depression could be manifested in the form of a physical disorder of psychogenic origin."

Diagnostic impression — A diagnosis of myofascial pain dysfunction syndrome of pathological psychogenic origin, compounded by a developing traumatic bilateral temporomandibular joint arthritis was proposed.⁹

Treatment plan and follow-up — It was suggested that treatment be presented in three stages: firstly, psychiatric therapy with the dual aim of alerting the patient to the psychiatric component of her facial pain with appropriate treatment, and preparing her for the surgery needed to correct the chronic TMJ pathology; secondly, conservative facial muscle relaxation and mandibular relearning exercises;¹ and thirdly, oral surgery involving bilateral arthroplasty and silastic implants. Upon presentation of our findings, the patient and her husband refused the proposed treatment plan, and sought treatment elsewhere. An im-

*Darvon (Eli Lilly & Company, Canada, Scarborough, Ontario).

†Serax (Wyeth Limited, Downsview, Ontario).

Fig 5 Right temporomandibular joint (trans-cranial views).

A. Jaw closed (habitual centric occlusion): There is marked asymmetry of the condyle in the glenoid fossa with increased TMJ space anteriorly (arrow A) and decreased TMJ space posteriorly (arrow B). A generalized radiolucent texture of the superior surface is noticeable with thinning of the lamina dura, loss of smooth surface contour and a possible osteolytic depression anteriorly. This view was taken post-menisectomy.

B. Jaw open: there is limited range of movement on vertical jaw opening. A loss of lamina dura accompanied by osteolytic lesions are present on the antero-superior and posterior condylar surfaces (arrows C and D, respectively). This view was taken post-menisectomy.

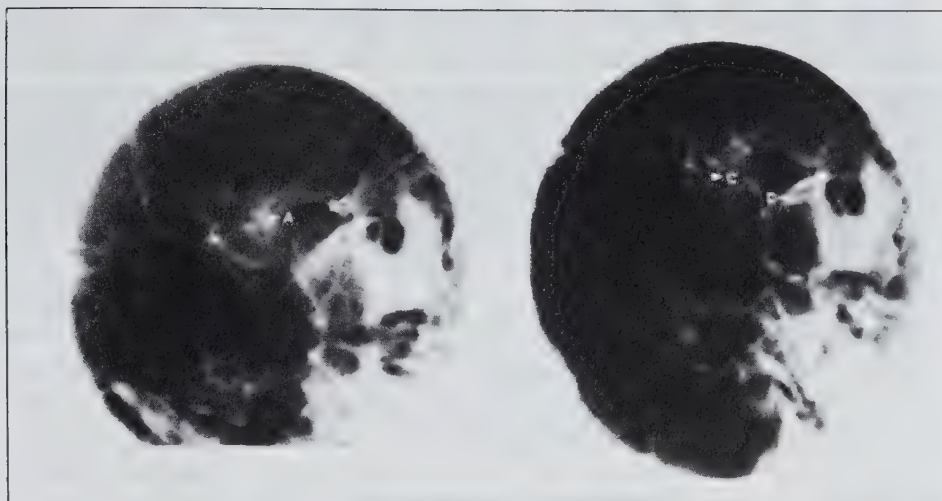


Fig 5A

Fig 5B

mediate bilateral TMJ arthroplasty with no condylar reconstruction was performed. Immediate relief was realized; however, the temporomandibular joint symptoms returned within six months, postoperatively. The postoperative histopathologic report confirmed a preliminary diagnosis of traumatic bilateral intra-articular degenerative arthritis.¹⁰

Case 4

In November 1977, a 41 year old male physicist was examined regarding left facial pain of the head, neck and shoulder, which he described as disabling. Questioning revealed a history of pain onset six months previously. Associated symptomatology included chronic lower back pain (lumbar disc disease), cervical disc disease, tinnitus and recurrent otitis media of the left ear, a recent dermatological rash of the left cheek (subjectively reported by the patient) accompanied by a visible left facial muscle spasm of the peri-orbital and cheek areas. Current marital discord, as well as a heavy exposure to radiation for therapy of tonsillitis at age 13 years were also elicited in the history taking. Medications taken included acetylsalicylic acid*, whenever needed, for pain, and carbamazepine† for a suspected left trigeminal neuralgia or hemifacial spasm, with little improvement. Follow-up blood and platelet studies proved normal. The patient had also reported an increase in the severity of his chief complaint following construction of a physiological bite appliance which he had worn continuously for three weeks.

Extra-oral examination revealed a mild lateral canthitis of the left peri-orbital area, probably related to the left facial muscle tic. There was moderate spasm of the left posterior cervical, trapezius and levator scapulae muscle groups. No apparent limitation of mandibular movement was recorded. During mandibular jaw function, however, a click of the right TMJ in late mandibular closure (hinging movement) was noted, with subsequent pain in the area of the right medial pterygoid muscle. Intra-oral examination revealed a

fairly intact dentition with a history of dental bruxism and jaw clenching. There was good overall support of the soft and hard oral tissues, with moderate mobility of the maxillary anterior teeth. Lower jaw movements were partially uncoordinated and rigid in all directions. Functionally, the patient exhibited bilateral cuspid rise, no balancing contacts, with disocclusion of the posterior teeth by the anterior teeth in protrusion.

Radiology — The Panoramic radiograph along with bilateral TMJ views⁷ revealed no evidence of overt pathology.³

Consultation — Otolaryngological examination could assess no apparent abnormality of either auditory apparatus.

Diagnostic impression — A diagnosis of myofascial pain dysfunction syndrome secondary to jaw clenching and dental bruxism (psychogenic stress component) was proposed.

Treatment plan and follow-up — A two-week regimen of chlorzoxazone-acetaminophen* was initiated, during which time the patient developed a complete unilateral Bell's palsy of the left side two days into therapy, which regressed completely within four weeks. Paradoxically, the patient was completely asymptomatic during this period, which would seem to indicate the original complaint to be one of a myalgic nature, since motor function of the seventh cranial nerve alone is affected in Bell's palsy; trigeminal function, both motor and sensory, remains intact.^{11, 12} The spontaneous pain regression associated with the palsy could be explained in such a way as to insinuate a relaxation of the fascial structures (muscle of facial expression) on the left side as a result of the presenting motor paralysis. Such a four week interval would be more than sufficient to allow a reversal in previous neuromuscular imbalances, resulting in muscle relaxation. However, the muscles of facial expression are not reported to be primarily involved in MPDS exacerbation.^{1, 2} The arguments that we could be dealing with either a strong psychogenic or a purely neural component are, therefore, proposed as well.¹³

*Anacin (Whitehall Laboratories Limited, Toronto, Ontario).

†Tegretol (Geigy Pharmaceuticals, Dorval, Quebec).

*Parafon Forte (McNeil Laboratories Limited, Don Mills, Ontario).

Following palsy remission, biofeedback therapy (facial muscle relaxation) was initiated. The patient once more reported feeling free of his newly-returning chief complaint of TMJ pain, especially during a one week vacation away from home. This would strongly indicate a tension-related myalgia as primary etiology for the original chief complaint. An acute exacerbation then occurred six weeks later, for which methocarbamol* was prescribed with moderate success. At this time, the patient's neurosurgeon independently advised surgical treatment for his acute lower back pain. The treatment was rendered in another institution, and on further inquiry it was found that the patient had died due to a postoperative surgical complication.

Discussion

The above-mentioned case reports clearly illustrate the need for a comprehensive understanding of the various etiologies of facial pain. As with all body regions, the head and neck may be subjected to various forms of pathological insult. The temporomandibular joints, in particular, remain a physical entity in which disease may occur. However, the many intricate vascular, neural, lymphatic and muscular structures associated within such a limited physiological space often lead to confusion regarding the actual source and manifestation of such pathology.

The following findings are suggestive radiographically of inflammatory TMJ disease:² (1) loss of TMJ space; (2) thinning or loss of lamina dura of the condylar head and/or glenoid fossa; (3) flattening of the condylar head and/or articular eminence; and (4) spur formation. Other changes associated with inflammatory TMJ disease are sclerosis in the glenoid fossa and/or condylar head, separation of bony spurs from the condylar head and thickening of the soft tissue lining of the temporomandibular joint space. The following radiographic findings, moreover, are suggestive of muscle spasm associated with myofascial pain dysfunction syndrome: (1) lack of concentricity of the condylar head within the glenoid fossa; (2) lack of anterior movement of the condylar head on vertical jaw opening; and (3) unequal anterior movement of the right and left sides on vertical jaw opening.⁷ The latter three findings may be seen in the absence of inflammatory joint changes, or concurrent with such changes. Notably, degenerative osteoarthritis of the TMJ may develop in the absence of MPDS; or as a sequela to the long-standing myofascial pain dysfunction syndrome, particularly in the absence of such osteoarthritic involvement in any other body joint. Therefore, the presence of inflammatory TMJ disease does not rule out a diagnosis of MPDS. On the contrary, these two pathological entities may combine to pose a solution to the question of why, in some cases, the temporomandibular joints alone should become arthritically involved, while other stress-bearing joints of the same body system are not (as in Case 2).

In the discussion of the first two cases, we have shown how an arthralgia may or may not present, in conjunction

with a myalgia, in the form of an acute exacerbation of temporomandibular joint osteoarthritis. We have also shown how a triad of pathological entities in the form of a myalgia (MPDS), and arthralgia (traumatic osteoarthritis of the temporomandibular joints) and a masked psychiatric depression may group into a single predominant chief complaint of TMJ pain, as in Case 3. Lastly, in Case 4, we have introduced two possibilities: that of a neural component concomitant with on-going MPDS, as well as that of a spontaneous body-regulating mechanism in the form of a Bell's palsy to regulate neuromuscular fascial pain.

The need therefore, for a proper multidisciplinary approach to clinical investigation is mandatory if one is to attempt to uncover obscure causes of certain TMJ and facial problems. Such methodology enables the clinician to establish a definitive diagnosis which in turn leads to the proposal of an appropriate treatment protocol.

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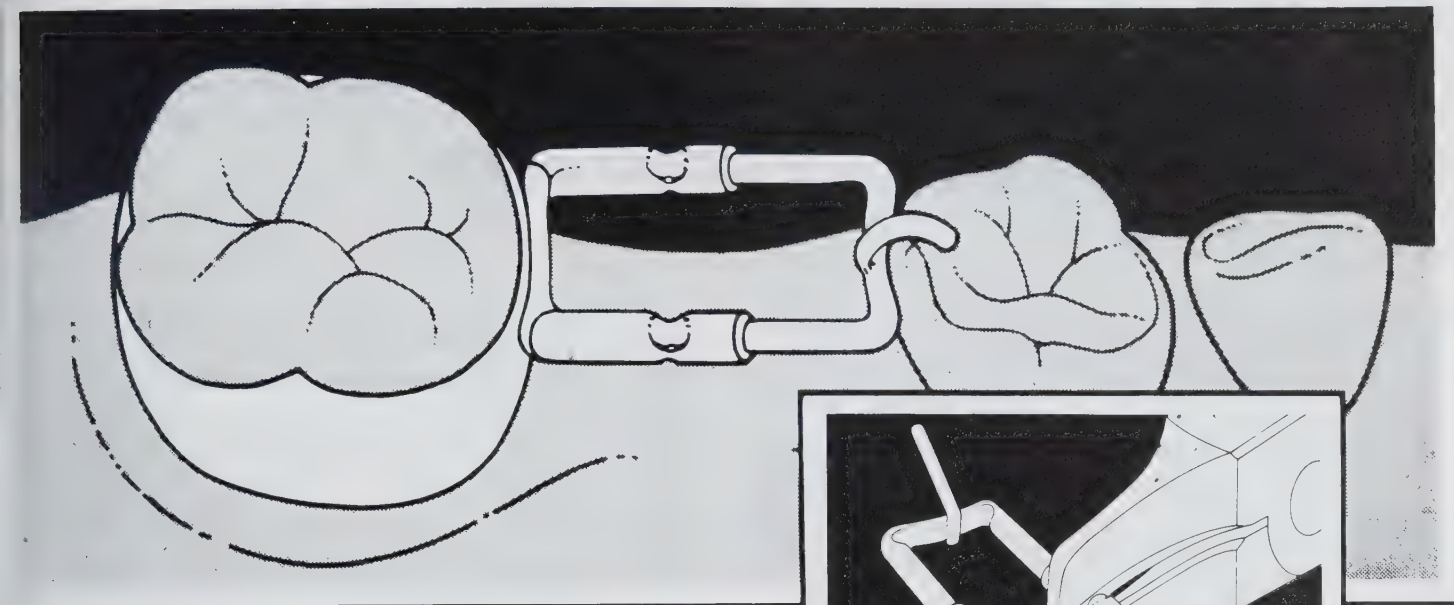
Dr. Camarda is senior resident, Department of Dentistry, St. Mary's Hospital, Montreal.

Dr. Langlais is director of graduate dental diagnostic sciences, Department of Diagnosis and Roentgenology, University of Texas School of Dentistry, San Antonio, Texas.

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*Robaxin (A. H. Robins Limited, Montreal).

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SUR L'ENSEIGNEMENT DE L'OCCLUSION

L'occlusion, a-t-on dit, c'est la dentisterie. L'enseignement, jadis, pouvait laisser supposer que l'occlusion concernait d'abord une position statique des contacts entre les dents, mais aujourd'hui, grâce notamment aux articulateurs, à l'intérêt considérable que l'on porte au fait de la dynamique de l'occlusion, il est devenu plus facile de capter le message que le Dr H. Thompson exprime dans sa préface au volume "Occlusion" (Stonebridge Press, Bristol, Eng.) "Laissez vos dents séparées". Pour atteindre cet objectif, il faut néanmoins que les contacts soient harmonieux surtout pour permettre une déglutition au cours de laquelle les contacts entre les dents ne provoquent pas des décompositions excessives de forces horizontales. D'un concept occlusal voulant que les dents servent d'abord à mastiquer, on ajoute ceux de la physiologie de la déglutition et de la phonétique de sorte que l'occlusion a pris une dimension beaucoup plus vaste qu'auparavant incitant les facultés à structurer plus précisément l'enseignement de cette matière. Le Dr A. Weisgold, de la faculté de médecine dentaire de la Pennsylvanie, a bien voulu autoriser la traduction et la publication du programme suivi à cette université, en marge de cette évolution du curriculum.

Traduction — Journal of Prosthodontic Dentistry: Juillet 1975 — p. 89 à 95.

Dans les disciplines cliniques enseignées aux étudiants en médecine dentaire, le sujet de l'occlusion a parfois rencontré une très grande résistance et parfois une acceptation très ardente. Le sujet semble avoir eu son origine en prosthodontie, s'être approfondi en orthodontie et en périodontie, mais il trouve sa base scientifique dans l'anatomie et la physiologie. Il est arrivé que tous les départements cliniques l'on réclamé comme leur sujet propre et à d'autres occasions, il a été laissé à tout vent. Malheureusement, cette dernière incidence est souvent devenue assez fréquente et, pour cette raison, l'occlusion a été couverte par l'enthousiasme, le ridicule, l'émotion et la controverse.

Pour jeter encore plus de piquant au sujet, il y a approximativement une douzaine de théories sur l'occlusion qui sont communément acceptées. Elles semblent toutes de conception variée. Elles réclament toutes un raisonnement scientifique de base promettent des résultats cliniques attrayants afin d'en promouvoir l'acceptation. Les différences

se situent dans la position mandibulaire (relation centrique, distale à la relation centrique, variance à l'antérieur de la relation centrique), forme des cuspes, fonctions du joint temporo-mandibulaire, dimension verticale et articulation dentaire pour en nommer quelques-uns. L'unanimité est généralement singulière: toutes réclament des succès constants et sans réserve. En raison de cette importante diversité, de plus en plus d'écoles dentaires entreprennent de faire de l'enseignement de l'occlusion une partie intégrale et vitale dans le curriculum sous-gradué.

En 1965, l'école de médecine dentaire de l'Université de Pennsylvanie a formé un comité ad hoc ayant pour but d'évaluer le curriculum déjà existant et de suggérer des changements possibles. Le comité en vint à la conclusion que le curriculum existant ne préparait pas pleinement les étudiants à la demande éventuelle des besoins de la dernière partie du siècle actuel. La décision majeure du comité fut de réviser complètement le curriculum et d'instituer une base profonde au cours d'occlusion.

Le programme de l'occlusion commença officiellement à l'automne 1967 et on y consacra environ 400 heures dans le cours. La majeure partie du temps (environ 90%) étant aux deux premières années, soit la phase pré-clinique de la formation dentaire. Théoriquement, le programme fut créé en une unité individuelle, avec son propre directeur, fonctionnant à partir d'un double niveau: un département séparé structuré comme les autres, avec son propre budget, et additionné de membres représentant tous les départements cliniques et des sciences de base.

Les départements spécifiques jouent un rôle important dans le programme relatif aux besoins des étudiants sous-gradués et en fonction du temps. Par exemple, le département de la périodontie donne tous les cours sur le périodonte normal, l'occlusion traumatique, etc. et en même temps, il délègue des membres à la pré-clinique de l'occlusion dans le but de faciliter l'enseignement de l'ajustement de l'occlusion. De même, tous les départements cliniques ont l'opportunité de devenir partie intégrante du programme et de se familiariser avec les approches cliniques de la thérapie occlusale. C'est ainsi qu'un tel arrangement a fait évoluer le programme de l'occlusion au sein de la faculté.

En principe, l'intention sous-jacente était d'inculquer aux étudiants, dès le début des études, l'importance de considérer le système stomatognathique comme une entité fonctionnelle totale. Jusqu'à ce qu'on puisse atteindre un tel niveau concernant le système buccal à l'état sein, on estima

Il serait inapproprié d'enseigner le processus pathologique ou la thérapie. Conséquemment, l'approche fut d'étudier la santé et ensuite la pathologie et la thérapie.

Voici brièvement les grandes lignes des contenus présentés sous forme de cours proprement dit, d'exercices de laboratoire, de séminaires, et de cliniques.

2^e ANNÉE

1) Temps alloué:

Environ 240 heures.

2) Objectif majeur:

Développer un milieu permettant à l'étudiant de comprendre le fonctionnement normal du système stomatognathique.

3) Cours:

- 1) morphologie dentaire (incluant la morphologie pulpaire et histologique).
- 2) périodonte normal.
- 3) dentition
- 4) capacité de protection normale de la dentition naturelle.
- 5) anatomie et fonctionnement de l'articulation temporo-mandibulaire.
- 6) enveloppe de mouvements.
- 7) physiologie et contrôle neuro-musculaire des mouvements de la mandibule.
- 8) articulation dentaire.
- 9) facteurs de l'occlusion.
- 10) physiologie de la respiration.
- 11) physiologie de la phonétique.
- 12) physiologie de la mastication.
- 13) physiologie de la déglutition.
- 14) embryologie du système manducateur (il est à noter que ce contenu suit l'étude du système adulte, croyant que les étudiants peuvent mieux apprécier le développement embryologique s'ils sont d'abord informés du système adulte).
- 15) croissance crânio-faciale et séquence de l'éruption et de l'exfoliation.
- 16) évolution de l'appareil de la suspension de la mandibule.
- 17) articulateur et arc facial.
- 18) occlusion physiologique.

4) Pré-clinique

- 1) Morphologie dentaire

a) premier objectif:

Introduire les étudiants à l'étude des unités dentaires proprement dites et aussi de commencer à développer leur dextérité et leur compétence technique.

b) moyen:

Les étudiants sculptent toutes les dents (sauf les 3^e molaires) en cire en leur dimension naturelle y incluant les racines sur un côté. Ils dissèquent ensuite des canaux sur les dents extraites.

- 2) Exercice inter-arche

a) premier objectif:

Faire la relation des dents avec leur environnement.

b) Technique:

Modèle spécialement préparé et employé pour positionner les dents préalablement sculptées dans une argile de couleur bleue représentant l'os alvéolaire. Les étudiants y observent l'inclinaison des dents, la position relative des racines aux plateaux osseux labiaux et linguaux, la localisation des bifurcations et des trifurcations, la proximité des racines adjacentes, les formes de l'embrasure, etc. . . . Ensuite, une argile rouge est employée pour simuler les gencives de façon à observer les formes gingivales.

- 3) Exercice inter-arche

a) premier objectif:

Faire la relation des cuspidés des dents et de leurs antagonistes. L'articulation et les contacts sont ainsi étudiés dans toutes les positions de la mandibule.

b) Exercice de cirage:

Pour enseigner les limites des surfaces occlusales et les contacts des cuspidés: sculpture "négative" et lecture des empreintes faites dans la cire par la dent opposée et sculpture d'un cadran: sculpture "par addition" en développement des surfaces occlusales selon les diverses positions de la mandibule.

N.B.: Les deux approches donnent une base solide pour l'étude de l'occlusion dentaire et des contacts des dents dans les diverses positions mandibulaires.

La base de l'étude de l'occlusion des dents est de l'appliquer à la thérapie occlusale.

Amener des étudiants à ce niveau sans application à une situation simulée et clinique fait du projet une tentative qui n'a pas de signification.

Cette séquence de laboratoire en est une où chaque unité dentaire est d'abord étudiée et ensuite mise en relation avec les structures avoisinantes et, enfin, les dents sont mises en relation avec leurs antagonistes.

- 4) Exposé clinique:

a) Objectif majeur:

De permettre à l'étudiant de commencer à examiner des dentitions saines ainsi que le fonctionnement du système buccal.

b) Procédé:

Les étudiants se groupent par paire et ils font mutuellement un examen, ils remplissent une chartre de diagnostic occlusal complet et, à l'aide de l'arc facial, ils enregistrent les relations occlusales et font le montage sur articulateur.

E) Séminaire

- 1) Premier objectif: initiation à la littérature dentaire.

2) Procédé:

En groupe de dix étudiants avec un professeur, ils travaillent sur des articles de la littérature pertinente à l'occlusion et on attend d'eux qu'ils intègrent, qu'ils analysent, discutent et critiquent ces articles.

En résumé, la première année du programme d'occlusion est consacrée à l'étude du système buccal sain dans tous ses divers aspects. La suite a été développée de telle sorte qu'elle puisse mettre en évidence le système buccal comme une unité fonctionnelle globale et non une partie séparée ou isolée. La cédule des cours et des laboratoires est arrangée de telle sorte que ces contenus puissent devenir des expériences significatives pour des étudiants de première année.

2e ANNÉE

A) Temps alloué:

Approximativement 130 heures.

B) Objectif majeur:

C'est l'étude des processus pathologiques qui affectent le système stomatognathique et le début de l'étude de la thérapie occlusale.

C) Cours théoriques:

- 1) Introduction à l'étude de l'occlusion pathologique.
- 2) Les maladies périodentaires.
- 3) Traumatisme occlusal.
- 4) Conséquence de la perte des dents.
- 5) Les habitudes.
- 6) Le syndrome douleur — dysfonction temporo-mandibulaire.
- 7) Etiologie et trouble de croissance en relation avec la malocclusion.
- 8) Examen de l'occlusion pathologique.
- 9) Ajustement occlusal de la dentition naturelle au moyen de meulage sélectif.
- 10) Les concepts de l'ajustement occlusal.
- 11) Dentisterie restaurative et thérapie occlusale.
- 12) Occlusion pathologique rétrognathique et prognathique.

D) La phase de laboratoire

1) Objectif majeur:

Présenter un nombre d'exercice de laboratoire pouvant démontrer des problèmes variés et classiques et la façon de les résoudre par meulage sélectif et/ou dentisterie restaurative.

C'est ici que l'on tente de grouper ensemble tous les contenus préalablement donnés aux étudiants.

A l'Université de Pennsylvanie, l'articulateur et l'arc facial Whip-Mix sont actuellement utilisés. Pour simuler le désaccord centrique (disharmonie) entre la relation centrique et l'occlusion centrique, on introduit un dispositif préfabriqué métallique* entre la sphère condylienne et la cage condylienne de l'appareil. Ces dispositifs sont de moins de 1 mm en épaisseur, et les modèles sont montés en position d'inter-cuspitation maximale (occlusion centrique) en prenant soin que ce montage soit fait avec les dispositifs. Lorsque les dispositifs métalliques sont enlevés, une représentation mécanique d'une discordance entre la relation centrique et l'occlusion centrique devient ainsi représentée.

2) Description des exercices

Exercice 1:

Une disharmonie entre l'occlusion centrique et la relation centrique est présente sur des modèles à occlusion idéale. L'ajustement occlusal par meulage sélectif élimine la disharmonie.

Exercice 2:

Une disharmonie entre l'occlusion centrique et la relation

centrique est présentée sur des modèles cliniques. C'est un modèle sans guide antérieur avec des postérieures usées et avec un élargissement excessif des tables occlusales et qui présente des interférences au côté non travaillant (balançant) bilatéralement.

Exercice 3:

Une disharmonie entre la relation centrique et l'occlusion centrique est présentée sur des modèles cliniques. L'occlusion démontre l'absence d'une molaire de la mandibule avec les changements occlusaux consécutifs, extrusion de la molaire maxillaire antagoniste et le mouvement mésial de la 2e molaire adjacente à l'espace édenté. Les étudiants exécutent cet exercice deux fois. En phase 1, sans ajustement occlusal préalable, une P.P.F. est faite en cire pour remplacer une dent manquante. L'objectif de cette phase est de rendre l'étudiant conscient des complications éventuelles de l'occlusion s'il n'a pas d'ajustement avant la fabrication d'une restauration fixe. La phase 2 est l'antithèse directe de la phase 1, en ce sens que les étudiants exécutent l'ajustement occlusal et ensuite fabriquent la restauration. La différence entre la phase 1 et 2 devient facilement significative pour les étudiants.

Exercice 4:

Les modèles d'un jeune patient avec dentition complète sont utilisés. L'examen clinique préalable révèle deux dents postérieures mobiles. Par ailleurs, la dentition est saine et l'occlusion stable. Pendant les excursions latérales de la mandibule, les dents mobiles sont en interférence l'une par rapport à l'autre sur le côté non travaillant (balançant). Six préparations classiques de cavité ont été préalablement préparées sur les modèles (incrustation, couronne, couronne complète). On demande aux étudiants de cirer les restaurations dans l'occlusion existante et d'éliminer l'interférence au balançant. Ceci se fait en effaçant la fosse centrale de la molaire mandibulaire avec l'incrustation et en diminuant la hauteur de la cuspide mésio-linguale de la molaire maxillaire antagoniste de façon à maintenir le contact occlusal pendant l'intercuspitation maximale.

Exercice 5:

Fabrication et ajustement d'un stabilisateur maxillaire en acrylique et d'une plaque maxillaire type HAWLEY.

Exercice 6:

On utilise des modèles cliniques démontrant une occlusion rétrognathe rendant impossible la correction par meulage sélectif. Les dents postérieures sont buccales par rapport aux dents de la mandibule et elles doivent être enlevées du modèle (i.e. c'est le repositionnement orthodontique). Le but de cet exercice est de démontrer la limitation des possibilités du meulage sélectif et servent en plus à indiquer le besoin de l'orthodontie.

Exercice 7:

Des modèles cliniques présentent une situation plus grave que dans l'exercice numéro 3. Certaines dents postérieures ont été enlevées. Il y a présence de pathologie périodentaire

*Disponible à la Whip-Mix Corporation, Louisville, Kentucky.

t enfin les antérieures maxillaire et de la mandibule ont chevauchées labialement.

Séquence de l'exercice:

- a) Montage des modèles avec disharmonie entre l'occlusion centrique et la relation centrique.
- b) Section des dents antérieures de la mandibule et leur repositionnement sur le support alvéolaire (ces dents sont légèrement raccourcies pour diminuer la ratio couronne/racine de la 2e année.
- c) Ajustement occlusal par meulage sélectif afin d'éliminer le désaccord entre la relation centrique et l'occlusion centrique.
- d) Couper les dents du modèle et les repositionner correctement sur la crête alvéolaire.
- e) Cirage de 4 restaurations postérieures (fixes) stabilisant l'occlusion.

La suite des exercices est arrangée de telle sorte que les problèmes deviennent de plus en plus difficiles à mesurer que les étudiants progressent. Cependant, les objectifs thérapeutiques demeurent les mêmes, et en pratique, les étudiants trouvent les projets de plus en plus faciles parce qu'ils deviennent plus renseignés sur le concept thérapeutique. Des instructions écrites précèdent tous les projets de laboratoire afin d'expliquer le problème clinique, les objectifs thérapeutiques, les complications possibles et les moyens d'atteindre les grands objectifs. On y ajoute des diapositives, des radiographies puisqu'elles représentent les problèmes cliniques d'occlusion qui ont été traités par les membres de la faculté. Un syllabus est disponible au sujet des phases de laboratoire pré-clinique de la 1ère et de la seconde année du programme.

3e ET 4e ANNÉE

A) Temps alloué:

Approximativement 30 heures en plus de la clinique.

B) Objectif majeur:

Addition et approfondissement du programme des deux premières années. Les 3e et 4e année sont utilisées pour des séminaires sur différents sujets traitant d'occlusion comme par exemple le traitement d'une malocclusion de pseudo-classe 3, séquence thérapeutique, prothèse périodentaire, etc. De plus, des conférenciers invités visitent et discutent de ce concept d'occlusion avec les étudiants.

C) Phase clinique:

Pour être significatif, le programme doit être instauré et approfondi pendant les années cliniques. Pour atteindre ce but, on a alloué beaucoup de temps et d'effort sur l'étude des objectifs de la thérapie occlusale. Bien que des problèmes occlusaux variés puissent nécessiter des approches thérapeutiques différentes (meulage sélectif, orthodontie et dentisterie restaurative), les objectifs doivent toujours rester les mêmes. Réalisant les problèmes pertinents dans une importance clinique dentaire sous-gradué, on a abordé la question des désordres de l'occlusion de la façon suivante:

- 1) Sauf dans les cas d'édentation complète, des modèles de tous les patients sont montés avec arc facial et articulés,

en relation centrique et en position de protrusion et de latéralité.

- 2) Les étudiants en font une étude, ils vérifient leurs observations avec les détails cliniques et font un diagnostic précis enregistré sur une chartre d'examen clinique.
- 3) Le fait d'ajuster l'occlusion sur des modèles montés avant de commencer cette procédure en bouche s'est avéré une expérience très valable pour l'étudiant. Sous la directive d'un professeur, l'étudiant est capable de réaliser s'il est en mesure d'atteindre des objectifs et plus important encore, il peut possiblement déterminer si le meulage sélectif doit être entrepris ou non. L'exécution d'un certain nombre de procédures d'ajustement occlusal et d'orthodontie mineure est un pré-requis dans la formation satisfaisante de chaque étudiant:
- 4) En prosthodontie et en restauration, on s'attend à ce que les étudiants puissent évaluer et déterminer si l'occlusion doit être traitée en centrique acquise ou en position de relation centrique. Ils peuvent cirer une restauration en intercuspitation maximale ou ils peuvent effectuer un meulage sélectif avant de faire une restauration. Les exercices complétés en 2e année du programme d'occlusion sont des exercices classiques que les étudiants rencontrent pendant leur période clinique.
- 5) A l'automne 72, une clinique d'ajustement occlusal a été formée pour faire face aux problèmes complexes de l'occlusion. Cette clinique est composée des membres du département de l'occlusion.

PLAN DE TRAITEMENT

Récemment, il a été décidé que l'enseignement du plan de traitement soit sous la juridiction du département de l'occlusion. Cette modification est une percée majeure dans la coordination de l'enseignement pré-clinique et clinique. Comme pour le programme pré-clinique, l'étude du plan de traitement sera enseignée par des membres du département de l'occlusion et aussi par des représentants d'autres disciplines cliniques. Avec l'espérance d'une intégration de tous les départements.

SOMMAIRE

L'école de médecine dentaire de l'Université de Pennsylvanie, à la suite d'une analyse, a complètement révisé son programme sous-gradué. Une importante transformation fut celle du développement du cours d'occlusion comprenant approximativement 400 heures de cours, séminaires, clinique et pré-clinique. La première année du cours d'occlusion a officiellement commencée à l'automne 1967.

Théoriquement, le programme d'occlusion est administré comme entité séparée avec son propre directeur et son propre budget, avec représentation par des membres de tous les départements cliniques et des sciences de base. Par cette association inter-départementale, un programme sur l'occlusion s'est développé, aidant ainsi à coordonner l'enseignement clinique dans les 3e et 4e année du programme sous-gradué. Le programme était conçu pour développer le concept du fonctionnement normal du système

stomatognathique avant de commencer l'étude de la pathologie occlusale et de la thérapie.

L'enseignement de l'occlusion doit être intégré au curriculum aussi tôt que possible. Il doit être intégré avec toutes les disciplines cliniques et de science de base et apprécier la thérapie à partir d'une base rationnelle et réaliste. L'idée générale de la thérapie occlusale doit transcender dans toute forme de traitement et non pas seulement sur les formes de traitement les plus sophistiquées.

L'expérience du programme au cours des années s'est traduit par un changement certain dans l'approche des étudiants à la dentisterie clinique. Il y a une plus grande prise de conscience des causes de la pathologie occlusale et des méthodes pour les traiter

Dr Arnold Weisgold
University of Pennsylvania
School of Dental Medicine
Philadelphia, P.A. 19174

1 "The Physiological Role of Dental Occlusion in the Masticatory System" Vol. 1, p.4.

2 "Physical and Anatomical Studies" D. Cosmos 70:913, 1928.

COMMENTAIRES

Le Dr Weisgold mentionne que le comité chargé d'évaluer le curriculum (de 1965) "en vint à la conclusion que le curriculum existant ne préparait pas pleinement les étudiants à la demande éventuelle des besoins de la dernière partie du siècle actuel".

Cette phrase est lourde d'implications. Elle confirme l'opinion du Dr R. Jones¹ qui écrit "Aujourd'hui, l'incidence des patients souffrant de dysfonction temporo-mandibulaire augmente de façon alarmante".

Dès 1927, le Dr House² avançait que 75% des restaurations dentaires étaient de nature destructrice pour le système manducateur et la santé en général.

Or, ces commentaires sont à peu près explicables du fait que l'enseignement a trop négligé l'aspect fonctionnel du système buccal se contenant de l'aspect statique de la restauration. De plus, les progrès techniques ont permis à plus de praticiens d'exécuter des travaux de plus en plus sophistiqués.

Les praticiens réalisent l'importance de l'occlusion pour la restauration. Personne ne le met en doute, mais personne non plus ne s'occupe de faire le point parmi la quantité des opinions qui sont émises au sujet de cette matière, de sorte que le généraliste, entre les chaises de sa clinique, continue de penser que la science de l'occlusion reste toujours la science de la confusion.

Heureusement, les gradués des dernières années reçoivent, eux, une éducation polarisée par des concepts précis.

Il semblerait opportun que les responsables de l'éducation continue structurent un programme inspiré de celui de nos écoles (ils se rapprochent à plusieurs points de vue de celui de la faculté de Pennsylvanie) et apportent aux généralistes une idée unifiante sur les connaissances de base, sur les pré-requis de la réhabilitation buccale fonctionnelle et sur les moyens à prendre pour prévenir et traiter les désordres de l'occlusion.

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BRITISH COLUMBIA — Port Coquitlam. For sale or lease: Busy family practice with three operatories. High gross. Good for one ambitious dentist or two associates. Owner willing to make special arrangements for older or experienced dentist. Contact: Dr. J. W. James, 2381 Bury Street, Apt. 113, Port Coquitlam, B.C. V3C 1Z9. Telephone: (604) 942-7694 (home).

BRITISH COLUMBIA — Vancouver. For sale or lease: Well established and thriving dental practice. Reply to CDA Box Number 1870.

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BRITISH COLUMBIA — Vancouver Island. For sale: Well established, preventive practice. Three operatories, with a fourth one plumbed. Last year's gross was \$170,000. Owner wishes to retire. Reply to CDA Box Number 1855.

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BRITISH COLUMBIA — Courtenay. Full time associate required with option to buy in. Contact: Dr. Derek Duvall, 556 Fifth Street, Courtenay, B.C. V9N 1K3. Phone: (604) 338-5981 (office) or (604) 339-4272 (residence).

BRITISH COLUMBIA — Richmond. Associate required for preventive oriented practice in a new medical dental office, located in a residential and shopping plaza convenient to downtown Vancouver. Possibility of future partnership if desired. Please contact: Dr. Richard L. Kofsky, #2 — 9371 No. 5 Road, Richmond, B.C. V7A 4E1. Telephone: (604) 271-9611.

BRITISH COLUMBIA — Vancouver. Associate with two years' experience preferred, for four operator, modern dental office in city center. Will sell practice in three years, with worthwhile benefits considered each year preceding year of sale. Reply to CDA Box Number 1864.

ALBERTA — Calgary. Associate required to take over two operatories, fully equipped. No capital needed. Terms negotiable. High income area close to Calgary. Reply to CDA Box Number 1871.

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ONTARIO. Wanted: Oral Surgeon. Must be well trained in all phases of oral surgery and ambulatory anaesthesia. Association leading to possible early partnership in aggressive, extremely successful practice. Reply to CDA Box Number 1848.

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April 1979/Volume 45/No. 4

Canadian Dental Association/Association Dentaire Canadienne

HOSPITAL DENTISTRY

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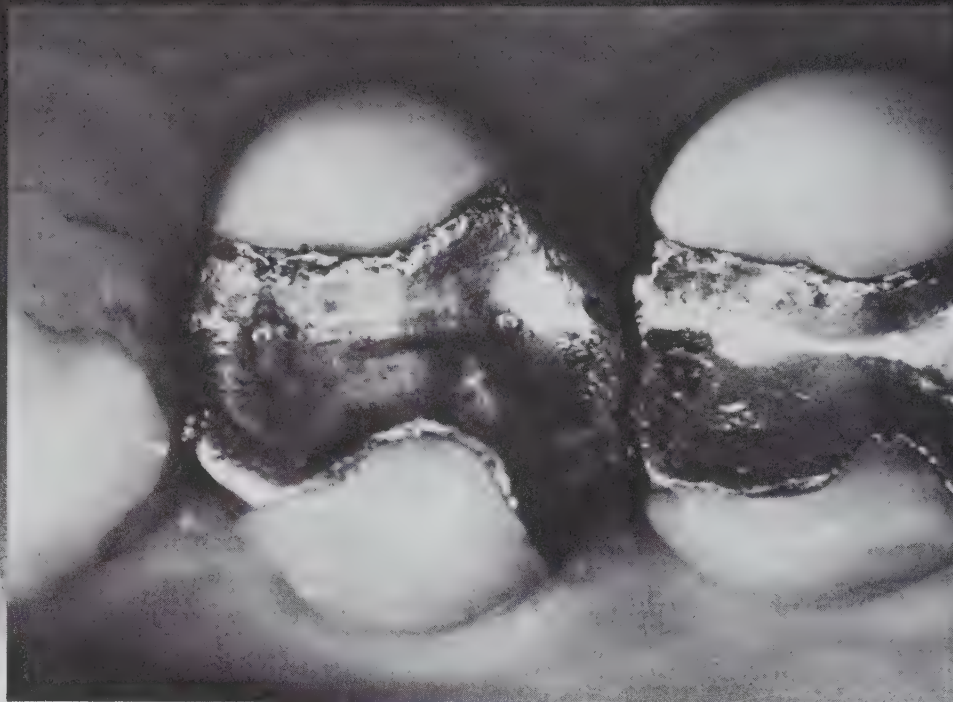


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[†]Beiswanger, B.B., et al.: J. Dent. Child. 45:137, 1978



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La direction du Journal ne partage pas nécessairement les opinions qu'expriment ses collaborateurs à moins que l'Association Dentaire Canadienne ne les ait adoptées officiellement.

Announcements/Avis

We urge readers to confirm meeting dates with the contact listed with each announcement.

Canadian Dental Association

1979 National Convention, Quebec City, September 9-12. Contact: Dr. Clément Caron, Convention Chairman, 1979 CDA National Convention, 1575 St. Louis Road, Sillery, Quebec G1S 1G4. Telephone: (418) 527-8969 or 687-5271.

Association Dentaire Canadienne

Congrès national 1979, Québec, 9-12 septembre. Pour renseignements: Dr. Clément Caron, directeur général, congrès 1979 de l'ADC, 1575 chemin St-Louis, Sillery, Québec G1S 1G4. Téléphone: (418) 527-8969 ou 687-5271.

Canadian Meetings

Alpha Omega — Mount Royal Dental Society Limited Attendance Course, Montreal, April 27-28, 1979. Speakers: Dr. Howard Skurow, periodontics, prosthetics; Covert Baily, nutrition, physical fitness. Contact: Dr. A. Brenner, 7005 Kildare Road, Suite 11, Cote St. Luc, Quebec H4W 1C1.

Canadian Academy of Periodontology and Ontario Society of Periodontics Meeting, Four Seasons Hotel, Toronto, May 4-5, 1979. Speakers: Dr. A. R. Ten Cate, Dean, Faculty of Dentistry, University of Toronto. Subject: The Periodontium. Dr. Clifford Ochsenbein, Dallas, Texas. Subject: Periodontal Surgical Procedures. Contact: Dr. Michael Litchen, Suite 302, 3025 Hurontario Street, Mississauga, Ontario L5A 2H1.

Ontario Dental Association, 112th Spring Meeting, Sheraton Centre, To-

ronto, May 13-16, 1979. Contact: Mrs. W. C. Durham, 234 St. George Street, Toronto, Ontario M5R 2P2.

Association of Prosthodontists of Canada Meeting, Park Plaza Hotel, Toronto, May 26-27, 1979. Sunday speaker: Dr. Gunner Carlson, Association will present honorary life membership to Dr. Kenneth Kerr of Halifax. Contact: Dr. Herb Ptack, 3535 Queen Mary Road, Suite 314, Montreal. Telephone: (514) 739-6388.

Les Journées Dentaires du Québec, Queen Elizabeth Hotel, Montreal, May 27-31, 1979. Contact: Dr. Morton R. Lang, 5253 Decarie Blvd., Montreal, Quebec H3W 3C3. Telephone: (514) 481-0397.

British Columbia College of Dental Surgeons 1979 Convention, Hotel Vancouver, June 5-8, 1979. Contact: College of Dental Surgeons of British Columbia, 1125 West Eighth Avenue, Vancouver, British Columbia V6H 3N4.

Alberta Dental Association, Annual Convention, Red Deer, Alberta, June 7-9, 1979. Contact: Dr. Ron Gish, Lacombe, Alberta.

Western Canada Dental Society Convention, Hotel Saskatchewan, Regina, June 7-9, 1979. Contact: Dr. T. E. Donavon, 205 McCallum Hill Building, Regina, Saskatchewan S4P 2G6.

Association of Canadian Faculties of Dentistry/Association des Facultés Dentaires du Canada, Annual Meeting, Saskatoon, June 17-22, 1979. Contact: Dr. G. W. Myers, 5059 Dental Pharmacy Building, University of Alberta, Edmonton, Alberta T6G 2H7.

7th International Symposium on Dental Hygiene, Vancouver, British Columbia, July 25-28, 1979. Contact: 7th International Symposium on Dental Hygiene, c/o Venue West Ltd., 1704-1200 Alberni Street, Vancouver, British Columbia V6E 1A6.

Canadian Association of Oral and Maxillofacial Surgeons Annual Meeting, Quebec City, September 8-11, 1979. Theme: Maxillofacial Trauma. Contact: Dr. Victor Goodyer, 565 St. Jean, Quebec City, Quebec G1R 1P5.

Canadian Association of Orthodontists, 31st Annual Meeting and Convention, Hotel Frontenac, Quebec City, September 8-9, 1979. Contact: Dr. R. Faith, 605-1538 Sherbrooke Street West, Montreal, Quebec, or Dr. J. J. Schachter, Box 952, Saskatoon, Saskatchewan.

Canadian Academy of Oral Radiology Annual Meeting, Quebec City, September 9, 1979, the first day of the Canadian Dental Association's National Convention. Contact: Dr. E. Panneton, Laval University, Quebec City, Quebec G1K 7P4.

Royal College of Dentists of Canada Symposium, Chateau Frontenac Hotel, Quebec City, September 9-10, 1979. Theme: "1979 — The International Year of the Child: Dental Perspectives." Speakers are from Denmark, Switzerland, the United States and Canada. Contact: Dr. C. L. B. Lavelle, Program Chairman, RCDC Symposium, Faculty of Dentistry, University of Manitoba, Winnipeg, Manitoba R3E 0W3.

Canadian Society of Forensic Science Annual Meeting, Ritz Carlton Hotel, Montreal, October 15-19, 1979. Two-day symposium on Dentistry and the Law will be held on the 15th and 16th. Contact: Dr. R. B. J. Dorion, President, Canadian Society of Forensic Science, Suite 710-D, Sun Life Building, Montreal, Quebec H3B 2V6.

International Meetings

Prosthodontic Society of South Africa Second International Congress and Dental Care Exhibition, Durban, South Africa, April 28-May 5, 1979. Contact: Dr. Helmut Heydt, Private Bag 1, Houghton, Transvaal 2041. Telephone: 642-4687.

International Dental Congress in the Middle East, Damascus, Syria, April 30 - May 2, 1979. Organized by the Syrian and Jordanian Dental Associations with the assistance of the Fédération Dentaire Internationale and the World Health Organization. Contact: Dr. Hisham Burhani, President, Syrian Dental Association, 29 Aiar Street, Damascus, Syria.

International Symposium on Restorative Dentistry — Current Status and Future Considerations, Jerusalem, Israel, May 3-4, 1979. Speakers: Dr. Frank Celenza, New York University College of Dentistry, and Dr. Raymond Leibowitz, University of Dental Surgery, Paris, France. Co-sponsored by the Hebrew University-Hadassah School of Dental Medicine and the Alpha Omega Fraternity, Toronto Chapter. Contact: Dr. Hart Levin, 2006 Bathurst Street, Toronto, Ontario M5P 3L1, or Dr. Robert S. Klugman, Hadassah School of Dental Medicine, P.O. Box 1172, Jerusalem, Israel.

French Orthodontic Society 1979 Congress, Paris, France, June 1-4, 1979. Themes: New Occlusal Concepts in Orthodontic Treatment and Treatment with extraction of First Molars. Contact: J. Philippe, 44 rue Jean Goujon, 75008 Paris, France.

Sixth World Congress of Acupuncture, Paris, France, June 17-22, 1979. Contact: Pierre Bidault de Villiers, Service Presse "Mondial" 3 rue de la Grande Truanderie, 75001 Paris, France.

Academy of General Dentistry Annual Meeting, New Orleans, June 23-27, 1979. Contact: Department of Meeting Planning, Academy of General Dentistry, 211 East Chicago Avenue, No. 1244, Chicago, Illinois 60611.

American Dental Society of Europe, 85th Meeting, St. Moritz, June 25-29, 1979. Contact: Brian J. Parkins, Society Secretary, 57 Portland Place, London W1N 3AH, England.

Second Asian Pacific Congress in Anxiety and Pain Control in Dentistry, Honolulu, Hawaii, July 2-5, 1979. Contact: Australian Society for the Advancement of Anaesthesia and Sedation in Dentistry, Suite 904, Hooker House, 175 Pitt Street, Sydney, New South Wales 2000.

Society for the Advancement of Anaesthesia in Dentistry, Second International Congress on Modern Pain Control (Sedation, Anaesthesia and Analgesia in Dentistry), Royal Lancaster Hotel, London, England, July

13-16, 1979. Contact: Secretary, SAAD '79, 53 Wimpole Street, London W1M 7DF, England.

International Association of Dentistry for Children Seventh Congress, Budapest, July 19-22, 1979. Contact: Congress Bureau Motesz, H-1361 Budapest, P.O. Box 32, Hungary.

7th International Symposium on Dental Hygiene, Vancouver, British Columbia, July 25-28, 1979. For details see listing under "Canadian Meetings".

American Association of Oral and Maxillofacial Surgeons Annual Meeting, New Orleans, September 14-18, 1979. Contact: AAOMS, 211 East Chicago Avenue, Chicago, Illinois 60611.

New York State Academy of Dental Practice Administration Meeting, Toronto, October 12-13, 1979. Speaker: Dr. Harold Wirth of New Orleans. Contact: New York State Academy of Dental Practice Administration, 1736 Mount Hope Avenue, Rochester, New York 14620.

Fédération Dentaire Internationale, 67th Annual World Dental Congress, Paris, France, October 20-26, 1979. Contact: FDI, 64 Wimpole Street, London W1M 8AL, U.K.

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Let's Keep Dentistry for Children in Private Practice

I wish to point out some false impressions which may be gained from the article, "Let's Keep Dentistry for Children in Private Practice" in the January edition of the Journal. It is not my intention to debate the private vs. public systems of dental care delivery to children, however I would take issue with the statement that Vancouver school children whose teeth were restored in grade one at a school clinic were in a poorer state of repair by grade seven than children whose teeth were restored by private practitioners. The authors use as reference for this statement "unpublished data". What are these data? What controls were used? What numbers of children were examined? Who did the examinations? What indices were used? How were the data treated statistically? It seems to me that use of "unpublished data" to support a statement with such far-reaching implications is dangerous and unscientific.

I would also like to point out that even if the "unpublished data" did support the statement this would in no way prove that dentistry delivered through a public health clinic creates in people a lack of interest in their own health and well-being and produces poor long term results. The Vancouver Health Department dental division is fulfilling a need mainly among disadvantaged groups of people. We restore these children to good dental health in kindergarten and urge the parents to begin a regular routine of

home care and dental check-ups with a family dentist. However, so often economic considerations block their best intentions. Stated simply, they cannot afford the high cost of dentistry and consequently their children's teeth may gradually deteriorate over the years. Wherein lies the blame? To negate the efforts of our clinics on the basis of former patients' poor dental state six years after our last treatment seems to ignore the fact that we are generally dealing with a special segment of society.

Finally I would like it understood that all restorative work done in our clinics is by fully qualified dentists, not auxiliaries, and therefore no comparison can accurately be drawn between Vancouver clinics and those of other countries such as Australia or New Zealand.

*W. C. Hadaway, BSc, DMD,
Dentist — Burrard Health Unit,
British Columbia.*

It was not the intention of the authors to imply that the restorative work done by dentists of the Vancouver Health Department is inferior to that done by private practitioners. The Grade 7 children referred to in the article who were completely restored in dental clinics when they were in Grade 1 were compared to children who had received virtually no dental treatment while in Grade 1. This evaluation was a minimal

one carried out by two dentists in the Vancouver Health Department and of course cannot claim to apply to all Vancouver children. The results of this evaluation were quoted because no other data are available to assess the outcome of the comprehensive dental treatment program carried out by the Vancouver Health Department.

The authors stated that clinic treatment has not succeeded in motivating patients to seek dental care from a private practitioner after the clinic treatment is no longer available. The Vancouver survey wasn't the only evidence to support this statement. Similar conclusions were made from the findings of other studies quoted in the article.

Dr. Hadaway correctly points out that the Vancouver Health Department is meeting an important need by restoring the teeth of children of a special segment of society. However, in Vancouver (as in many other places), the only evaluation of the dental treatment program is in terms of the number of procedures completed. In this connection I am pleased to note that an outcome oriented management program is being instituted this year by the Health Department in Vancouver. This new approach should provide better evaluations of the outcomes of all health programs, including dental health.

*E. J. Hyde, DDS, MSD
Assistant Professor
Faculty of Dentistry
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C-37 brief "well received"

CDA URGES DISCUSSION OF PROPOSED TAX AMENDMENTS

When is a small business not a small business? When it's run by a dentist, doctor, lawyer or accountant, according to the Federal Government's proposed Bill C-37.

As drafted, several provisions of the proposed new tax regulations would severely limit the right of professionals to form separate service corporations to provide non-professional services to the practice for a fee.

The Canadian Dental Association recently presented a brief to the Standing Senate Committee on Banking, Trade and Commerce on the Bill as it relates to small business tax deductions.

Citing the "substantial educational debts, large capital outlay, long working hours, [reduced] life expectancy and [lack of] fringe benefits," faced by dentists, Dr. Clyde Covit, president-elect of CDA, told the Senate Committee "small business corporations or service companies should not be treated differently because they may be operated in connection with professional practice."

David Matheson, Q.C., of the Toronto law firm McMillan, Binch and one of Canada's leading tax lawyers, speaking on behalf of the Canadian Dental Association, emphasized the willingness of dentists to work with the government to formulate tax revisions more acceptable to all concerned.

Thomas McDonnell, also with McMillan, Binch and George Watts, CDA director of Administration, were on hand in support of the February 28 presentation.

Bill C-37, if passed, will amend the

Tax Reform legislation of 1971 in such a way that dentists, doctors, lawyers and accountants will not qualify for the small business corporate tax rate unless all Canadian provinces legislate to allow the incorporation of these practices.

According to the CDA submission, the amendment is unjustified and discriminates against the four professional groups.

"There is no acceptable rationale for the proposed exclusion of four kinds of professional practices from the small business corporate tax treatment available to other professions," said Matheson presenting the CDA brief.

"A profession is a business," he continued. "How is a dentist different from a plumber for income tax purposes? Why is a chiropractor treated differently than a dentist or medical doctor? Why is a lawyer treated differently than an architect? Why is a management consultant treated differently than an accountant?"

Because Alberta is the one province that has recently opened the door to tax deductions by professionals incorporated as small businesses, the CDA brief points out that if that province is prepared to permit the incorporation of professionals, "the consequences of a professional in Alberta doing so should not depend on how other provinces choose to exercise their jurisdiction to regulate incorporation."

The 1978 Fall Budget papers suggest the rationale for the proposed changes in the federal tax legislation is to prevent individual professionals, who "defer and reduce taxes by setting up a

corporation and leaving earnings in the corporation," from having an edge over employees who can't use the same tax shelter.

"If this is an attempt to justify the proposed new rules [saying] a person in a professional practice is in the same position as an employee," said Matheson, "the rationale is not supportable."

The CDA brief points out further that employees have not traditionally been regarded in the same manner as those who run a business. Basic legal and economic differences between the two groups have, in the past, been acknowledged.

"The employed have security of employment and fringe benefits and have not undertaken the kind of financial risks and commitments made by a person carrying on business," added Matheson.

Not only are the proposed amendments regarding small business deductions themselves unacceptable to dentists, the "hurry-up" approach taken by the minister of finance in drawing up the proposals has left the CDA non-plussed.

According to the Association submission, not enough time has been given before the proposed implementation of the amendments for an analysis of the changes.

"The bottom line is that the CDA has asked that changes be deferred for one year to allow time for discussion with the Department of Finance to satisfy all concerned that the policy makers have fully considered all relevant aspects of the proposals," said Dr. Rod Moran,

CDA president, in a recent letter to his colleagues. "CDA's role is to actively pursue and investigate every avenue to ensure the dental profession is fairly treated by the Government of Canada," he noted.

Matheson also commented on the see-saw approach taken by tax policy makers towards tax legislation since the implementation of the Tax Reform legislation of 1971. He pointed out that as recently as 1977 the substantial increase in the dividend tax credit and the amount of profits qualifying for the low business rate, created a positive incentive for businesses to incorporate for income tax reasons.

"In a typical case," he said, "net taxes on business profits earned in a corporation and distributed to the shareholder were nine to ten per cent lower than equivalent profits earned in an unincorporated business."

The problem, according to Matheson, is that a reverse bias is now looming with Bill C-37. "In some instances, such as would apply to dentists, doctors, lawyers and accountants, there will be an added tax penalty if a corporation is formed to carry on the practice or to provide non-professional services to their practice," he said.

Dramatic and conflicting shifts in tax policy on an annual basis mark the deterioration of the tax legislative process in this country, Matheson told the Senate Committee. "We object to a succession of contradictory amendments which do not reflect a considered approach to a sound and workable tax structure. As businessmen, we cannot be expected to substantially reorganize our affairs on a regular basis to meet the latest approach to what is regarded as this year's tax abuse. "This latest approach," he continued, "will prove to be structurally unsound and administratively unworkable."

Although no decision has been made concerning CDA's request for a year's time to discuss the amendments with government representatives, Dr. Covit left the Senate proceedings with an optimistic outlook. "I feel the Senators fully supported our submission," he said.



David Matheson, Q.C. and Thomas McDonnell of the Toronto law firm McMillan, Binch are flanked by CDA president-elect Dr. Clyde Covit, right, and George Watts, CDA director of Administration, left, after presenting a brief to the Standing Senate Committee on Banking, Trade and Commerce on Bill C-37 and the Federal Government's proposed small business tax deduction. The CDA representatives requested a green light go-ahead for a year of discussion of the proposals before any further "ad hoc changes" to existing tax law are implemented.

COMMITTEE SAYS "NO" TO C-37 — CDA BRIEF GETS SENATE SUPPORT

The Senate Committee on Banking, Trade and Commerce which heard CDA's brief on the federal government's Bill C-37, is "not satisfied" with the tax proposal on small business deductions and has recommended that clause 38 of the Bill be deleted.

In a four-point response to Bill C-37, the Senate Committee noted that the act of singling out dentists, lawyers, medical doctors and accountants as businessmen who do not qualify for the small business tax deduction is "arbitrary and discriminatory." Further, the Committee argued that a precise definition of the "qualifying" and "non-qualifying" business written into the tax Bill confers indirect tax powers on the government, a move that violates the "fundamental prin-

ciple that the power to tax should be reserved to Parliament alone."

The Committee report, calling draft regulations respecting small business tax deductions "unsatisfactory", concludes that "professionals who are permitted to incorporate under the laws of their respective provinces should be entitled, where applicable, to the small business deduction."

Recognizing that portions of the tax legislation were "designed to put an end to perceived abuses," Committee members considered the definition of a "non-qualifying" business "too broad" and expressed concern it would "cause unnecessary hardship in many instances." All corporations, regardless of size, should be entitled to the small business deduction, said the report.

PEDODONTICS AND NUTRITIONAL COUNSELLING WILL BE FEATURE TOPICS AT DALHOUSIE'S POST COLLEGE ASSEMBLY

The Post College Assembly on May 6-8, 1979 at Dalhousie University, Halifax will recognize the International Year of the Child by its topics — "Pedodontics" and "Nutritional Counselling in the Dental Office."

Dr. Bob Spedding, Professor and Chairman, Department of Pediatric Dentistry, University of Kentucky College of Dentistry, Lexington, will give his main presentation on "Root Canal Therapy for Primary Molars". He will give two presentations to smaller groups on "The Distal-Shoe Space Maintainer" and "Thoughts about the Stainless Steel Crown".

Dr. Spedding received an AB, DDS, and an MSD from Indiana University. A diplomate of the American Board of Pedodontics, Dr. Spedding has been

very active in the Association of Pedodontic Diplomates, the Kentucky Dental Association, the American Association of Dental Schools, and the American Academy of Pedodontics. He has been a consultant to several organizations including the American Fund for Dental Health and the National Preventive Dentistry Demonstration Program. Dr. Spedding has given many presentations on Pedodontics and has extensively published in the area.

Dr. Marcia Boyd, Assistant Professor and Coordinator of Operative Dentistry, Department of Restorative Dentistry, University of British Columbia and Dr. Nancy Schwartz, Assistant Professor, Division of Human Nutrition, School of Home Economics, UBC, will team up for their main

presentation entitled, "A Taste of Nutrition" (An Introduction to the Science of Nutrition). They will offer two workshops on the Evaluation of Dietary Intake and Dietary Evaluation and Counselling.

Dr. Boyd received a DDS from the University of Alberta and an MA from the University of British Columbia. Before joining the Faculty of Dentistry at UBC she worked for the Department of National Health and Welfare and for the City of Vancouver. Dr. Boyd is contributing to dental education in Canada through her chairmanship of the Education Committee of the Association of Canadian Faculties of Dentistry, her membership on the Canadian Dental Association Dental Aptitude Test Committee, her

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involvement in the American Association of Dental Schools through the Steering Committee on Learning Resources and the Committee of Operative Dentistry Educators.

Dr. Schwartz received a BHE from the University of British Columbia and a PhD from Ohio State University. She worked as a therapeutic dietitian and nutrition instructor at the Queen Elizabeth Hospital and School of Nursing in Montreal and as a teaching assistant at Ohio State University before coming to UBC. Dr. Schwartz is Director of Continuing Education in Nutrition and Dietetics at UBC. Drs. Boyd and Schwartz have published jointly and given many team presentations on the topic of Nutritional Counselling.

The Post College Assembly at Dalhousie is held each year just prior to the graduation ceremonies for the Faculty of Dentistry. In addition to the clinical sessions there is a film program, a Sunday night buffet and a luncheon to honor the graduating class. This pro-

vides the opportunity for the graduating class to be introduced to continuing education and to meet members of their profession.

For more information contact: Dr. Douglas V. Chaytor, Chairman, Con-

tinuing Education Committee, or Kaireen Vaison, Coordinator, Continuing Education in Dentistry, Dalhousie University, Halifax, Nova Scotia B3H 3J5. Telephone: (902) 424-2277.

CDA Retirement Savings Plan

Unit values of the Canadian Dental Association's Retirement Savings Plan stood as follows on February 28, 1979:

<i>Common Stock Fund</i>	\$39.630
<i>Fixed Income Fund</i>	\$21.784
<i>Guaranteed Fund</i>	\$15.460
<i>Balanced Fund</i>	\$11.310

Total assets (market value) of the plan were \$33,982,627.78.

The previous month's figures, as of January 31, 1979, stood as follows:

<i>Common Stock Fund</i>	\$39.243
<i>Fixed Income Fund</i>	\$21.840
<i>Guaranteed Fund</i>	\$15.607
<i>Balanced Fund</i>	\$11.768

Total assets (market value) of the plan were \$32,693,180.67.

For further information write to: CDA-sponsored Pension and Insurance Plans, 234 St. George Street, Toronto, Ontario M5R 2P2.

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FDI BASIC FACT SHEETS NOW AVAILABLE

The Fédération Dentaire Internationale has announced publication of the latest up-date of its Basic Fact Sheets.

The subjects of this regular survey, which first appeared in 1969, are dental manpower (including auxiliaries), dental education, licensure, the prevalence of dental conditions, private practice and public dental health services, and fluoridation policy; specialization and membership of organizations of dental traders and manufacturers are included where appropriate.

For the latest edition, 101 countries (72 member countries and 29 non-members) were approached to complete a questionnaire or to up-date their previous Basic Fact Sheet. The majority of countries up-dated to 1977, although those not up-dating were also included showing the year of last revision. The present edition contains a total of 95 countries.

The Basic Fact Sheets are an invaluable aid to all those involved in the provision of health services, teaching or the dental industry. Extensive appendices give detailed information on the world fluoridation status: whether water fluoridation, topical application, brushing with fluoride solution, tooth-paste or salt; as well as total population served. The functions and numbers of the various dental auxiliaries (hygienist, surgery assistant, laboratory technician and New Zealand type dental nurse) are also examined country by country, and their legal status, education and training, and dental duties described.

This new edition of the Basic Fact Sheets is now available in a looseleaf ring binder from FDI Headquarters, 64 Wimpole Street, London W1M 8AL, U.K. The cost per copy is \$50.00 (U.S.)

CFDE announces income for 1978

"Last year the Canadian Fund for Dental Education had operational income of \$223,544 and endowment fund income of \$57,000," according to the Fund's new Chairman, Dr. James A. Guest.

"Personal gifts from the profession of \$61,400 fell short of our objective and for the first time in three years were surpassed by contributions from business and industry of over \$75,000 or 26 per cent more than in any previous year. Much appreciated gifts from foundations and dental organizations plus investment income accounted for the balance of our operational income," said Dr. Guest.

"1978 gifts to existing endowment funds included \$55,000 from Dr. Lorne E. MacLachlan and \$2,000 from the Toronto Academy of Dentistry Crown and Bridge Study Club."

RESEARCH AND ESSAY AWARD CONTEST

The Canadian Association of Oral and Maxillo-Facial Surgeons has announced it will be sponsoring a Research and Essay Award Contest.

The purpose of this contest is to encourage and recognize outstanding research, either clinical or basic, or an exceptional essay related to the specialty of oral surgery and maxillo-facial surgery.

An appropriate certificate or plaque, two days' expenses and travel to the annual meeting to present the winning paper will be awarded.

Eligibility shall be restricted to:

1. Active members of the Canadian Association of Oral and Maxillo-Facial Surgeons;
2. Candidates for membership in the Association;
3. Interns and residents in accredited or accreditation eligible oral surgery training programs in Canada or/and Canadian residents training in an approved program in foreign countries.

Consideration will only be given to

those submissions that:

1. Have not been previously published, in toto, in the dental or medical literature.
2. Constitute basic or clinical research projects in a subject area related to the specialty of oral and maxillo-facial surgery.
3. Constitute an extensive review of the literature pertaining to a subject relevant to the specialty of oral and maxillo-facial surgery.

Manuscripts in triplicate, must be prepared in accordance with the format of the Journal of Oral Surgery, submitted by July 1st, 1979, and sent to: Dr. Huan Pham, Continuing Education Committee, 3535 Queen Mary Road, Montreal, Quebec H3V 1H8.

If the winning manuscript is submitted by multiple authors, the cash award and certificate will be given to the senior author. Award winners must present their papers before the Association at the Annual Convention in Quebec City, September 8-11, 1979.

Deaths

Denis, Clovis, 84. Montreal, Quebec. University of Montreal, 1920. 6-2-79.

Ellis, Freda. Ottawa, Ontario. Leeds University, 1960. 2-2-79.

Finlay, Charles M. St. Thomas, Ontario. University of Toronto, 1929. 28-1-79.

Harris, T. E., 77. St. John's, Newfoundland. St. Louis University, 1933. 15-2-79.

Parker, Harold M., 79. Sydney, Nova Scotia, Dalhousie University, 1932. 16-2-79.

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The Canadian Dental Association's National Convention will be held in Quebec City, September 9-12, 1979. Early pre-registration is strongly recommended. For your convenience registration and hotel reservation forms are included at the back of this issue.

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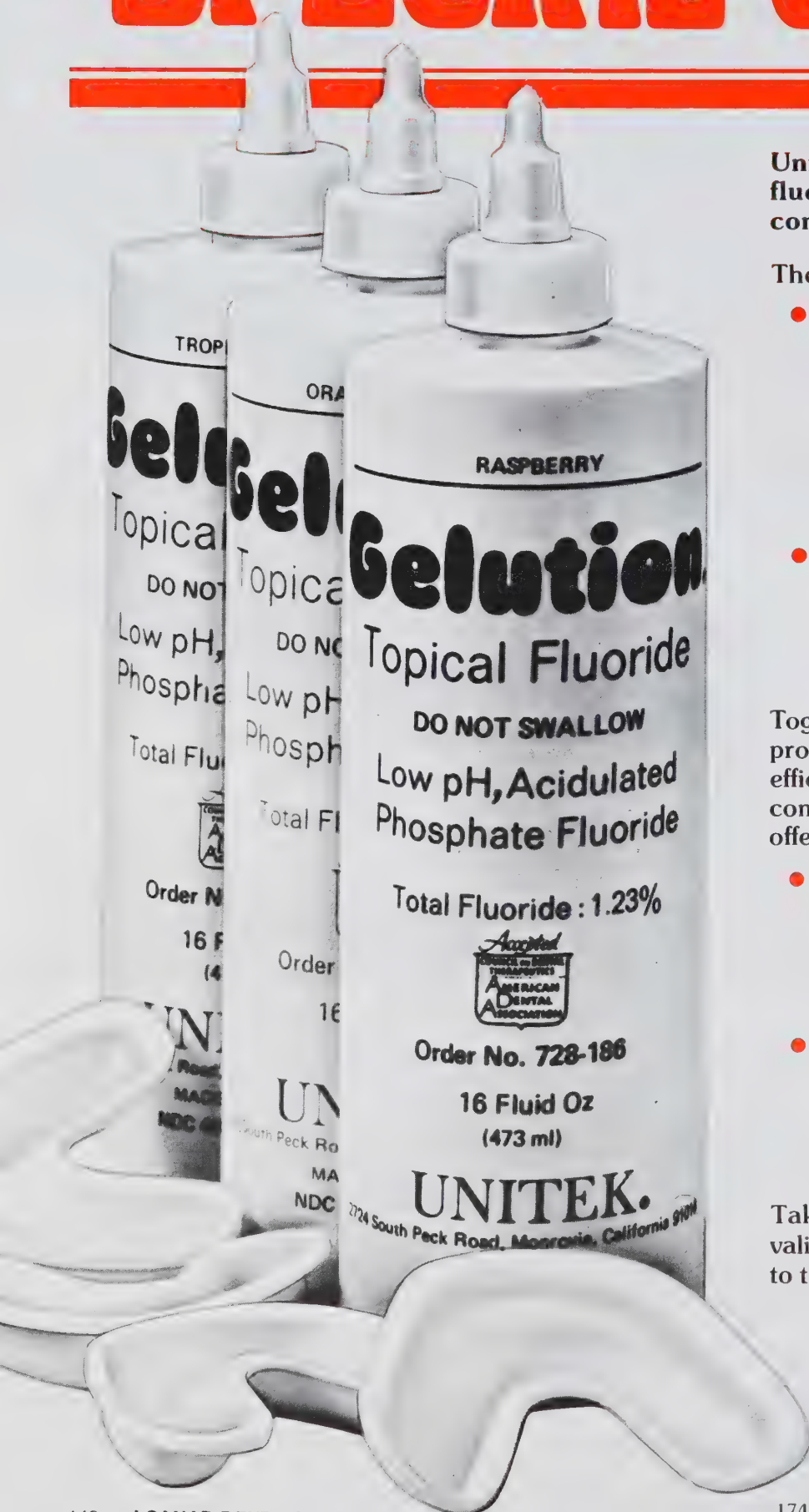
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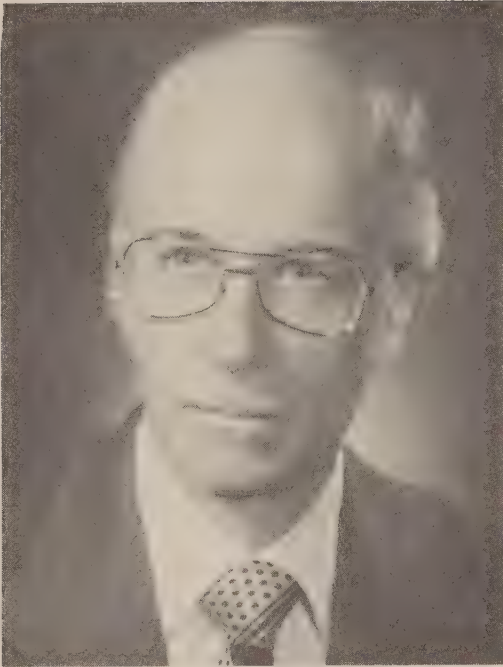


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canadian fund for dental education
fonds canadien pour l'enseignement dentaire
annual report 1978 rapport annuel



chairman's comments



The opening sentence of this, my first writing as Chairman of the Board of Trustees, must reflect the gratitude of the Trustees and, indeed, the dental profession in Canada for the outstanding leadership of my predecessor, Dr. J. W. Neilson. During his three-year term of office, the operational income of the Fund has grown steadily and has been translated into increasing assistance for dental education and research projects that benefit practising dentists, dental schools, dental teachers, dental students and, ultimately the dental patients. Dr. Neilson has been an exemplary Chairman and I consider it an honour and a challenging privilege to succeed him.

Later sections of this report will indicate the sources of annual gifts to the Fund and the dispersal of assistance in the various areas. I must pay tribute to those contributors from business and industry whose gifts in 1978, amounting to \$75,000, showed a 26% increase over their previous best. However, the fact that personal gifts from the dental profession did not match this pace and were, in fact, surpassed in total for the first time in three years by gifts from business and industry, is a source of great concern to the Trustees and will be seriously examined at our annual meeting.

I would also like to recognize the outstanding generosity of Dr. Lorne E. MacLachlan of Ottawa who last year increased his personal endowment fund to the magnificent total of \$100,000. The annual income from this endowment is divided between the dental faculties at Dalhousie, McGill, Toronto, and Western Ontario Universities and is used to improve prosthodontic teaching methods. The dental profession is deeply indebted to Dr. MacLachlan for this demonstration of his love and his concern for dentistry.

The Deed of Trust, under which the Canadian Fund for Dental Education was founded in 1962, very simply states in the opening paragraph that "the Fund is to be applied for the purpose of aiding and assisting dental education in Canada". In the intervening years this Trust has been upheld and fulfilled

through a great variety of projects and programs, for which over a million dollars has been provided. It is the firm intent of the Board of Trustees in 1979 to seriously examine and evaluate these aforementioned programs in order to determine the future thrust of the Fund and the possible necessity of a change of emphasis. The words of the American poet James Russel Lowell seem pertinent to the type of discussion we will be initiating –

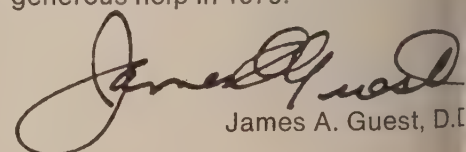
*New occasions teach new duties,
Time makes ancient good uncouth,
They must upward still and onward
Who would keep abreast of truth.*

For the truth of the matter is, that as financial constraints become increasingly evident and severe in our dental faculties, the number of new teacher-researcher positions being offered by our faculties is steadily decreasing. Consequently, the provision of money for teacher-training fellowships, which has been our top priority program in the past, and which has been mainly directed to applicants who present documented evidence from a faculty which is prepared to appoint them to teaching position, now requires serious review and reconsideration.

In all of these and any future discussions, our continuing goal will be advancement of the standards and prestige of dentistry and the promotion of a constantly improving level of dental health care.

Please be assured that your comments and suggestions are always most welcome, and if you would like more information about any of the Fund's activities, do not hesitate to let me know.

I express my deep and abiding gratitude to all who contributed to the goals and ideals of the Canadian Fund for Dental Education in 1978. Your support is as much appreciated as it is needed and I look forward to your continued generous help in 1979.


James A. Guest, D.I.

quelques remarques du président

première phrase de cette première communication que je fais à titre de président du Conseil des fiduciaires doit être la reconnaissance profonde qu'éprouvent les fiduciaires ainsi que toute la profession dentaire du Canada en raison de la qualité du leadership que nous a fait preuve le Dr J. W. Neilson. Au cours des trois années de son mandat, le revenu d'exploitation du Fonds n'a cessé d'augmenter et cette hausse s'est poursuivie par l'amplification de l'appui que nous avons porté à l'enseignement dentaire, aux enseignants dentaires et aux étudiants dentaires, c'est-à-dire finalement aux patients dentaires. Le

Dr Neilson fut réellement un président exemplaire et je considère que prendre sa succession est un honneur, un privilège et un défi.

Nous indiquons plus loin dans ce rapport les sources des dons annuels faits au Fonds et les divers domaines auxquels nous avons contribué. Je désire rendre hommage aux donateurs du monde des affaires et de l'industrie dont la contribution s'est élevée, en 1978, à un total de \$75.000, soit une augmentation de 26% en regard de la meilleure année préalable. Toutefois, les dons personnels de la profession dentaire n'ont pas suivi ce rythme de hausse et ils ont, en fait, été surpassés pour la première fois en trois ans par les dons en provenance des affaires; ceci inquiète beaucoup les fiduciaires et cette question sera mise à l'étude lors de notre assemblée annuelle.

Je désire également m'étendre sur la remarquable générosité du Dr Lorne E. MacLachlan d'Ottawa; l'an dernier, il a augmenté son fonds de dotation personnel, qui s'élève maintenant à la somme considérable de \$100.000. Le revenu annuel provenant de ce fonds est divisé entre les facultés de médecine dentaire des Universités Dalhousie, McGill, Toronto et Western Ontario et sert à perfectionner les méthodes d'enseignement dans le domaine de la prosthodontie. La profession dentaire est profondément reconnaissante envers le Dr MacLachlan pour cette preuve de dévouement envers la profession.

L'acte fiduciaire en vertu duquel le Fonds canadien pour l'enseignement dentaire fut fondé en 1962, signale simplement au premier paragraphe que "le Fonds servira à aider et à appuyer l'enseignement dentaire au Canada". Depuis, les dispositions de cet acte ont été réalisées grâce à une variété de programmes et de projets dans le cadre desquels nous avons présenté plus d'un million de dollars. Le Conseil des fiduciaires envisage d'étudier et d'évaluer ces programmes à fond en 1979, afin de pouvoir déterminer l'orientation future du Fonds et la nécessité éventuelle de modifier les priorités. Les vers du poète américain James Russel Lowell sem-

blent parfaitement appropriés pour le genre de discussions que nous avons l'intention d'initier:

*New occasions teach new duties,
Time makes ancient good uncouth,
They must upward still and onward
Who would keep abreast of truth.*

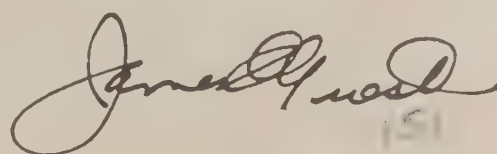
[Les nouvelles circonstances enseignent de nouvelles méthodes car à mesure que le temps passe, ce qui est bon devient impropre. Pour rester côte-à-côte avec la vérité, il faut savoir aller de l'avant].

Car, en réalité, à mesure que les contraintes financières deviennent de plus en plus rigoureuses au sein de nos facultés dentaires, le nombre de nouveaux postes d'enseignants/chercheurs offerts par nos facultés diminue régulièrement. En conséquence, notre programme prioritaire dans le passé, soit le financement de bourses destinées à la formation d'enseignants et octroyées aux candidats qui fournissaient une preuve d'emploi futur par une faculté, doit maintenant faire l'objet d'une sérieuse reconsidération.

Pour ces discussions, ainsi que pour toutes discussions futures, notre objectif constant sera la hausse des normes et du prestige de la profession dentaire ainsi que la promotion du perfectionnement continu des soins dentaires portés aux patients.

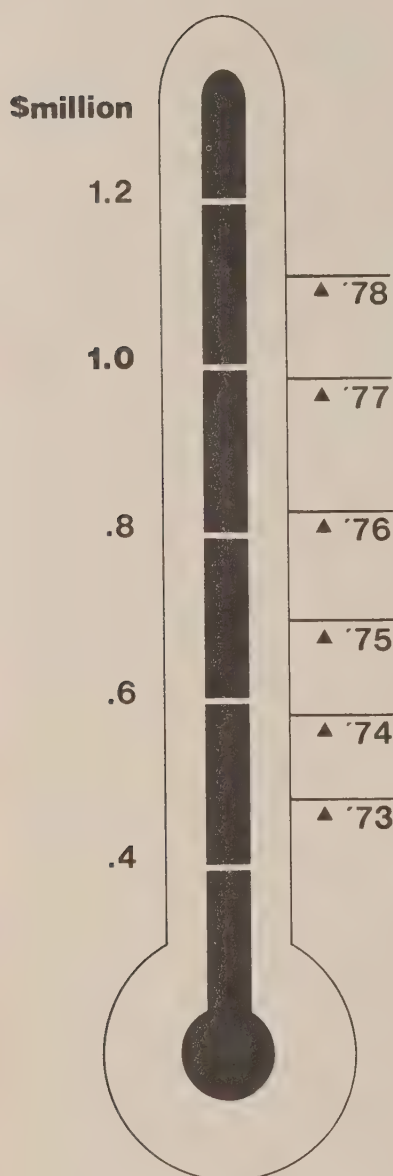
Puis-je également souligner que vos suggestions et commentaires sont toujours fort appréciés et si vous désirez obtenir des renseignements supplémentaires en ce qui concerne les activités du Fonds, n'hésitez pas à vous mettre en rapport avec moi.

Pour terminer, je désire exprimer ma profonde reconnaissance à tous ceux qui ont contribué en 1978 à ces objectifs et à ces idéaux du FCED. Votre appui est vivement apprécié et j'espère qu'au cours de 1979, nous pourrons continuer à compter sur votre généreux soutien.



1978 - a landmark year

CFDE assistance for dentistry to date



CFDE was organized in 1962 for just one purpose – to advance dentistry by supplying money for much needed projects that otherwise would probably remain unfunded.

Starting in 1964 with modest assistance of just over \$4,000, CFDE's annual help has grown steadily and in total at the end of 1978 rolled triumphantly over the million dollar mark (\$1,113,000). A historic milestone and a time for each and every contributor to take pride in what has been achieved!

It has been said that an organization entirely dependent upon voluntary

support may determine its future potential in direct proportion to the soundness of the use it makes of the contributors' dollars.

Ever mindful of this fact, CFDE's ten Trustees (seven dentists and three business leaders) carefully weigh each request for support against the overall needs of dentistry.

Since teacher training fellowships are such an important Fund program, the Trustees are assisted in their award decisions by an Advisory Committee of Fellowship Selection consisting of four dental teachers.

Here is how CFDE's first million has been invested to ensure a constantly improving level of dental health care for Canadians:

Teacher Training Fellowships for Dentists	\$ 552,000	50%
Unrestricted Grants to Dental Schools	\$ 134,000	12%
Graduate and Undergraduate Accreditation Surveys	\$ 74,000	7%
Special Research Project at the University of Toronto (funded by a Hospital for Sick Children Foundation Grant)	\$ 83,000	7%
Teacher Training Fellowships, Scholarships, Workshops and Conferences for Dental Auxiliaries	\$ 56,000	5%
Research, Teaching and Preventive Dentistry Conferences	\$ 113,000	10%
Dental Students' Conferences and Table Clinic Programs	\$ 78,000	7%
Dental Library Survey and Other ACFD Projects	\$ 23,000	2%
	\$1,113,000	100%

More than half of CFDE's grants go to dental schools and dental teachers

The future of the dental profession and the dental health of the Canadian people is, in a very real sense, in the hands of the dental schools.

It is for this reason that over the years CFDE has allocated 50% of available funds to teacher training fellowships and 12% to across the board unrestricted grants to dental schools.

Teacher training requires a substantial investment because support must be given to graduate dentists to

encourage them to pursue teaching careers in lieu of the more lucrative full time private practice.

In 1978 thirteen such fellowships were awarded with a total value of \$48,000. Over the years all ten dental faculties have been strengthened by this program.

Including 1978 awards, CFDE has allocated a cumulative total of \$134,000 directly to dental schools. Most frequent use of the grants has been for curriculum studies, teaching seminars, career guidance activities and other items not

provided for in school budgets. The Fund is confident that these grants have been extremely sound investments.

Value of dental research recognized by CFDE Trustees

As early as 1968 the Fund Trustees were able to demonstrate tangibly their interest in dental research by funding a conference attended by an outstanding research specialist from each dental faculty.

Over \$50,000 has now been provided to fund these meetings which are held every second year.

CFDE has also received major grants from the Hospital for Sick Children Foundation to finance a research project at the University of Toronto. Work is to be completed in 1979 and will contribute to an improved clinical treatment in children following fracture or osteotomy of the jaws. Up to the end of 1978, over \$100,000 has been devoted to this project.

Grants aid for dental students

Over 70% of grants awarded to date – over \$7,000 – has been in direct support of student activities.

1978 was the tenth consecutive year CFDE has financed a Students' Conference. It was also the eighth consecutive year CFDE has underwritten the cost of a Student Table Clinic program at the Canadian Dental Association's annual Convention.

Both of these meetings are attended by representatives from each dental school. Consequently all dentists entering practice for the last several years have in some measure benefited from these CFDE programs.

With the cooperation of Cooper Laboratories Limited a new and exciting program for dental students was organized in 1978. Starting in 1979, scholarships having a total value of \$1000 will be awarded annually in each dental school to students with an outstanding academic record and a demonstrated interest in preventive dentistry. Winners will be selected by each dental faculty and the first awards made in the spring of 1979.

Dental auxiliaries are important members of the dental health team

The Fund Trustees are keenly aware of this fact and over the years have helped to build a stronger dental health team by providing teacher training fellowships, scholarships and bursaries for hygienists, nurses and assistants as well as dental technology students.

CFDE has also made grants to fund a number of auxiliary workshops and conferences.

All told over \$55,000 has been used to upgrade dental auxiliary skills.

Highlights of 1978 income

Income from all sources in 1978 totalled over \$280,000, an increase of 19% over the previous year.

Support from business and industry leaped ahead with a record total of over \$75,000 and replaced the dental profession as the Fund's largest single source of income.

Operational income from the dental profession, including gifts to the P. G. Anderson Memorial Fund, amounted to \$61,000 and failed to equal the all time high established in 1977 of over \$63,000. This despite the fact that personal gifts from hygienists rose by \$500 to over \$1,600.

A most noteworthy gift in 1978 was a personal contribution of \$55,000 by Dr. Lorne E. MacLachlan of Ottawa to his CFDE endowment fund originally established in 1973 with a gift of \$45,000. Already over \$25,000 has been distributed to improve prosthodontic teaching methods in the four dental faculties sharing the income from this endowment.

On a somewhat smaller scale, but nonetheless greatly appreciated, was a further contribution of \$2,000 to the Toronto Academy of Dentistry Crown & Bridge Study Club's endowment fund established with CFDE in 1976. This endowment now stands at \$10,000 and the annual income is used to benefit dentistry as directed by the Fund's Trustees.

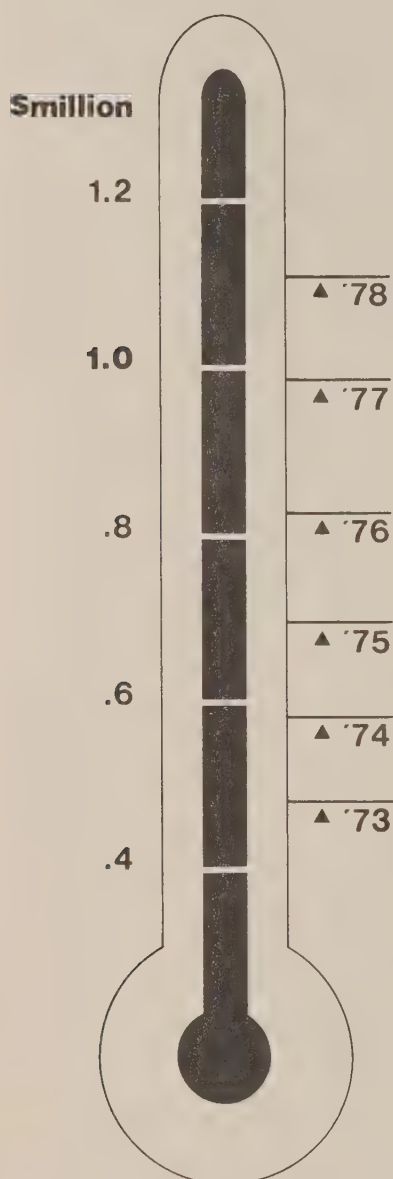
Operating costs were lower

Expressed as a percentage of income, operating costs decreased for the third consecutive year. 1978 Fund Raising costs were 14%, Management 8% and Program Services 6%, total 28% compared with 31% in 1977. Investigation shows that these costs compare favourably with those of similar organizations.



1978 - Une année mémorable

Appui financier apporté par le FCED à la médecine dentaire jusqu'à présent



Le FCED fut fondé en 1962 dans le but unique d'avancer la médecine dentaire, au moyen de la subvention de projets importants qui, autrement, n'obtiendraient pas de financement.

Depuis 1964, année pendant laquelle les subventions accordées par le Fonds s'élevaient à la modique somme de \$4.000, les subventions annuelles distribuées par le FCED ont augmenté régulièrement et à la fin de 1978, elles dépassaient le glorieux total d'un million de dollars (\$1.113.000). Il s'agit réellement d'un événement historique dont tous les donateurs, présents et passés, peuvent être fiers.

L'on dit parfois qu'un organisme qui

dépend totalement de fonds bénévoles peut déterminer son potentiel selon le degré de discernement avec lequel il dépense son argent.

Dans cette optique, les dix fiduciaires du FCED (sept dentistes et trois dirigeants d'entreprises) étudient avec soin chacune des demandes en regard des besoins d'ensemble de la profession.

Les bourses de formation des enseignants représentent pour le Fonds programme prioritaire et un Comité consultatif sur le choix des candidats, auquel siègent quatre enseignants dentaires, conseille les fiduciaires sur la sélection des boursiers.

Toujours dans le but de hausser constamment le niveau des soins dentaires donnés au public canadien, voici comment a été investi le premier million du FCED:

Bourses de formation d'enseignants dentaires	\$ 552,000	5
Subventions générales aux écoles dentaires	\$ 134,000	1
Enquêtes relatives à l'agrément des étudiants et des diplômés	\$ 74,000	
Projet de recherche à l'Université de Toronto (financé par une subvention de la Fondation de l'Hôpital pour les enfants malades)	\$ 83,000	
Bourses et subventions, ateliers et congrès pour les auxiliaires dentaires	\$ 56,000	
Conférences de la recherche, sur l'enseignement et de médecine dentaire préventive	\$ 113,000	1
Congrès des étudiants dentaires et programmes de tables cliniques	\$ 78,000	
Etude relative aux bibliothèques dentaires et autres projets de l'AFDC	\$ 23,000	
	\$1,113,000	10

Le FCED octroie plus de la moitié de ses subventions aux écoles et aux enseignants de médecine dentaire

L'avenir de la profession et de la santé dentaires est, en réalité, entre les mains des écoles de médecine dentaire.

Voilà pourquoi, pendant des années, le FCED a octroyé 50% des fonds disponibles à des bourses de formation d'enseignants et 12% au financement général, sans restrictions, des écoles.

La formation d'enseignants exige un investissement considérable car il faut

donner un appui financier à des dentistes diplômés en vue de les encourager à embrasser des carrières d'enseignement plutôt que de se lancer dans l'exercice privé à plein temps, proposition bien plus lucrative.

En 1978, le FCED a décerné treize bourses, dont la valeur totale s'élevait à \$48.000. Au cours des années, les dix facultés dentaires canadiennes ont toutes été consolidées grâce à ce programme.

Si l'on inclut les subventions de 1977 le FCED a décerné directement aux écoles de médecine dentaire un total

\$134.000. Le plus souvent, ces subventions étaient destinées à des études, à des programmes, à des séminaires d'enseignement, à des activités d'orientation professionnelle et à d'autres activités comprises dans les budgets universitaires. Les fiduciaires du Fonds ont confiés qu'ils ont fait là des investissements judicieux.

Fiduciaires reconnaissent la valeur de la recherche dentaire

En 1968, les fiduciaires du Fonds prouvent concrètement l'intérêt qu'ils voulaient vis-à-vis de la recherche dentaire, par le financement d'un conseil auquel assistaient les éminents chercheurs de toutes les facultés d'odontologie de médecine dentaire. Le FCED a offert plus de \$50.000 dans le but de financer ces rencontres qui ont lieu tous les deux ans. Le FCED a reçu des subventions considérables de la Fondation de l'Hôpital des enfants malades, destinées à financer un projet de recherches à l'Université de Toronto. Ce projet sera terminé en 1979 et contribuera à l'amélioration du traitement clinique des enfants souffrant d'une fracture ou d'une ostéotomie de la mâchoire. Jusqu'à la fin de 1978, la somme qui avait été consacrée à ce projet s'élevait à plus de \$134.000.

Augmentation de l'appui financier aux étudiants

Les subventions d'ensemble accordées à cette date – soit \$77.000 – sont destinées à financer les activités des étudiants. 1978 était la dixième année consecutive pour laquelle le FCED a financé les congrès des étudiants; c'était aussi la huitième année de suite pour laquelle il finançait le coût du programme de recherche des cliniques des étudiants, tenu au cours du congrès annuel de l'Association dentaire canadienne. En représentant de toutes les écoles d'odontologie, les dentistes participent à ces deux réunions. Par conséquent, tous les dentistes qui ont commencé à exercer ces dernières années ont profité, dans une certaine mesure, de ces programmes du FCED.

Conjointement avec les Laboratoires Cooper Ltée, le FCED a organisé en 1978 un nouveau programme, des plus intéressants. A partir de 1979, des bourses annuelles de valeur totale de \$500 seront octroyées aux étudiants de mérite de toutes les écoles de médecine dentaire qui ont témoigné un intérêt particulier vis-à-vis du domaine de la prévention. Les gagnants seront choisis par les facultés et les premières bourses décernées au cours du printemps 1979.

Les auxiliaires dentaires constituent des membres importants des équipes dentaires

Les fiduciaires du FCED sont très conscients de ce fait et, pendant les années passées, ils ont consolidé les équipes en offrant diverses bourses et subventions de formation d'enseignants aux hygiénistes, aux infirmières, aux assistantes et aux étudiants de technologie dentaire.

Le FCED a également financé un nombre d'ateliers et de congrès pour les auxiliaires. En tout, plus de \$55.000 ont été consacrés à perfectionner les compétences professionnelles des auxiliaires dentaires.

Ce qui ressort du budget de 1978

Les revenus provenant de toutes les sources en 1978 se sont élevés à plus de \$280.000, soit une augmentation de 19% en regard de ceux de l'année précédente.

Les donations en provenance d'industries et d'entreprises commerciales ont augmenté vertigineusement pour atteindre un total de plus de \$75.000; elles ont remplacé, en première place, les donations provenant de la profession dentaire.

Le revenu en provenance de la profession dentaire (y compris les dons faits au Fonds P. G. Anderson Memorial) s'élevait à \$61.000 et n'a pas atteint le record établi en 1977, année au cours de laquelle les contributions provenant de la profession étaient de plus que \$63.000. Et ce, malgré le fait que les dons personnels des hygiénistes ont augmenté de \$500 pour atteindre une somme supérieure à \$1.600.

Il faut ici citer la généreuse contribution faite par le Dr Lorne E. MacLachlan d'Ottawa; le Dr MacLachlan a ajouté au fonds de dotation de \$45.000

qu'il avait créé en 1973, une somme de \$55.000. Plus de \$25.000 ont déjà été octroyés au perfectionnement des méthodes d'enseignement de la prosthodontie dans les quatre facultés de médecine dentaire qui se partagent les intérêts de ce fonds de dotation.

A une échelle moindre, mais toutefois vivement appréciée, la contribution de \$2.000 faite au fonds de dotation du Crown & Bridge Study Club of the Toronto Academy of Dentistry, créé en 1976. Ce fonds s'élève maintenant à \$10.000 et le revenu annuel est utilisé au profit de la médecine dentaire selon les directives des fiduciaires du Fonds.

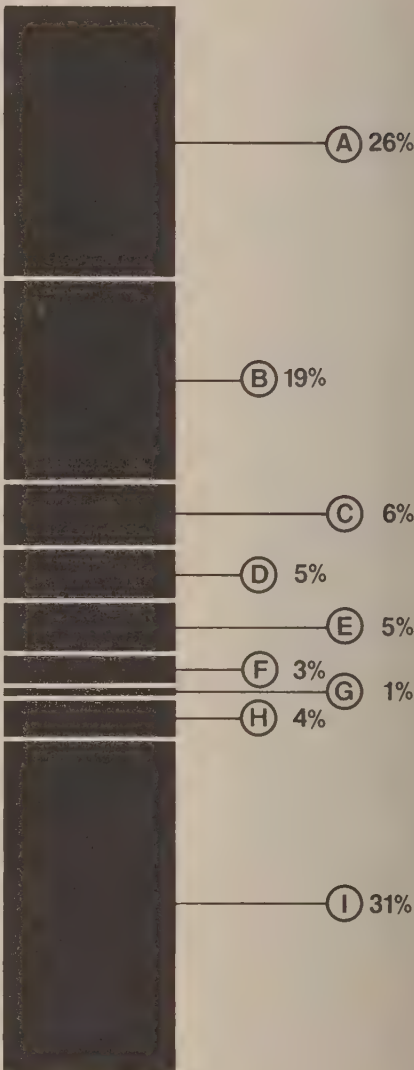
Réduction des coûts d'exploitation

Proportionnellement au revenu, les coûts d'exploitation ont diminué pour la troisième année consecutive. Les coûts s'appliquant à la campagne de souscription étaient, pour 1978, de 14%, les coûts administratifs de 8% et les coûts des services relatifs aux programmes de 6%, soit un total de 28% en regard de 31% pour 1977. A la suite d'une étude à cet égard, l'on peut dire que ces coûts se comparent favorablement avec ceux d'organismes semblables.



these programs helped dentistry in 1978
 your support made them possible
 grâce à votre appui, les programmes ci-dessous
 ont pu seconder la médecine dentaire au cours de 1978

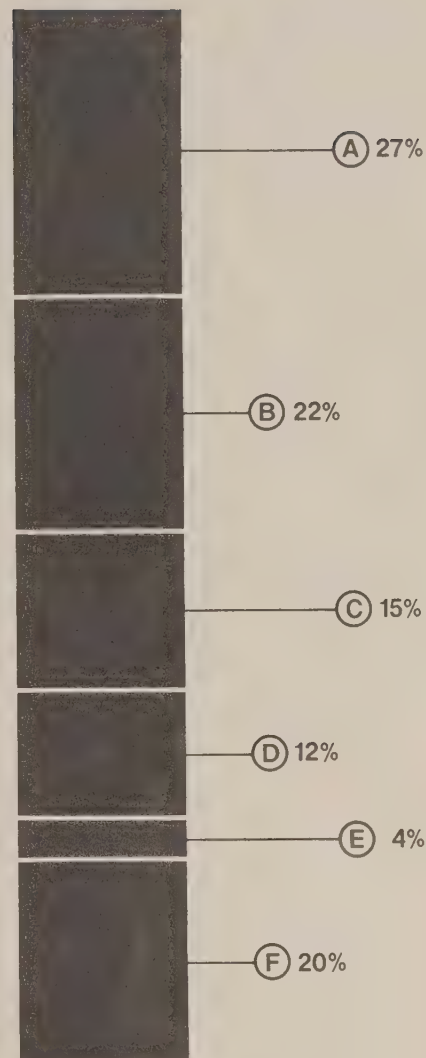
(A)	Teacher Training Fellowships (Dentists and Dental Hygienists) Bourses de formation en enseignement (Dentistes et Hygiénistes dentaires)	\$ 52,883	26%
(B)	Research Project – University of Toronto Projet de recherche – Université de Toronto	\$ 37,527	19%
(C)	Student Table Clinics and Conference Conférence et cliniques sur table des étudiants	\$ 11,345	6%
(D)	Grants to Dental Schools Subventions aux écoles dentaires	\$ 10,000	5%
(E)	Biennial Dental Research Conference Conférence biennale de la recherche dentaire	\$ 10,000	5%
(F)	Lorne E. MacLachlan Endowment – Teacher Training Awards Dotation Lorne E. MacLachlan – Bourses pour la formation d'enseignants	\$ 6,765	3%
(G)	Dental Teaching Conference Conférence sur l'enseignement dentaire	\$ 3,375	1%
(H)	Sundry Awards Octrois divers	\$ 7,622	4%
		\$139,517	69%
(I)	Invested in Income-Producing Securities Valeurs productives d'intérêt	\$ 61,785	31%
TOTAL		\$201,302	100%



A copy of the auditors' report
 is available on request.
 L'on peut obtenir, sur demande,
 une copie du rapport des vérificateurs.

Income by source - 1978 Sources des revenus - 1978

Business and Industry Commerce et industrie	\$ 75,657	27%
Dental Profession Profession dentaire	\$ 61,449	22%
Investment and Sundry Income Revenus de placements et de sources diverses	\$ 40,556	15%
Foundations Fondations	\$ 32,132	12%
Dental Organizations Associations dentaires	\$ 13,749	4%
Operational Income Revenus d'exploitation	\$223,543	80%
Endowment Fund Gifts Dons au fonds de dotation	\$ 57,000	20%
TOTAL	\$280,543	100%



Projects already approved for 1979 funding

Project	Sponsoring Agency
Scholarships for Undergraduate Dental Students	CFDE - Dental Faculties
Working Conference on Clinic Administration in Dental Schools	CDA - ACFD
Student Table Clinic Program	CDA - CFDE
Research at the University of Toronto	Hospital for Sick Children Foundation - CFDE
Dental Aptitude - Personality Testing	CDA - CFDE
Research - Dental Radiation Barriers	ODA - CFDE

Subventions dont le financement est déjà approuvé pour 1979

Projet	Organisme parrain
Bourses destinées aux étudiants dentaires	FCED - facultés de médecine dentaire
Congrès d'enseignement sur l'administration clinique dans les écoles de médecine dentaire	ADC - AFDC
Programme de tables cliniques des étudiants	ADC - FCED
Recherche à l'Université de Toronto	Fondation de l'Hôpital pour les enfants malades - FCED
Aptitude dentaire - tests de personnalité	ADC - FCED
Recherche - Barrières de radiation dentaire	ODA - FCED

Honour Roll

Tableau d'Honneur

Contributors - Business, Industry,
Trusts, Foundations and Dental
Organizations

Donateurs - Entreprises, Industrie, Fonds
de Fiducie, Fondations et Organismes
Dentaires

FOUNDING MEMBERS / MEMBRES ORIGINAIRES

Hospital for Sick Children Foundation, Toronto, Ont.

PATRONS / COMMANDITAIRES

- Amalgamated Dental Company (Canada) Ltd., Toronto, Ont.
- Caulk, L. D. Company of Canada, Toronto, Ont.
- Colgate-Palmolive Canada, Toronto, Ont.
Cooper Laboratories Ltd., Boisbriand, Que.
- Dentsply Canada Ltd., Toronto, Ont.
- Procter & Gamble Company of Canada Ltd., Toronto, Ont.

BENEFACTORS / BIENFAITEURS

- Ash Temple Ltd., Toronto, Ont.
- Denco, Division of McGaw Supply Ltd., Toronto, Ont.
- Pelton & Crane Company, Charlotte, N.C.
- Warner-Lambert Canada Ltd., Toronto, Ont.

SUSTAINING MEMBERS / MEMBRES DE SOUTIEN

- Cox Systems Ltd., Stoney Creek, Ont.
Crown & Bridge Study Club, Academy of Dentistry, Toronto, Ont.
General Electric Company, Milwaukee, Wisc.
- Medi-Dent Service Ltd., Burlington, Ont.
- Wrigley, Wm. Jr. Company Ltd., Toronto, Ont.

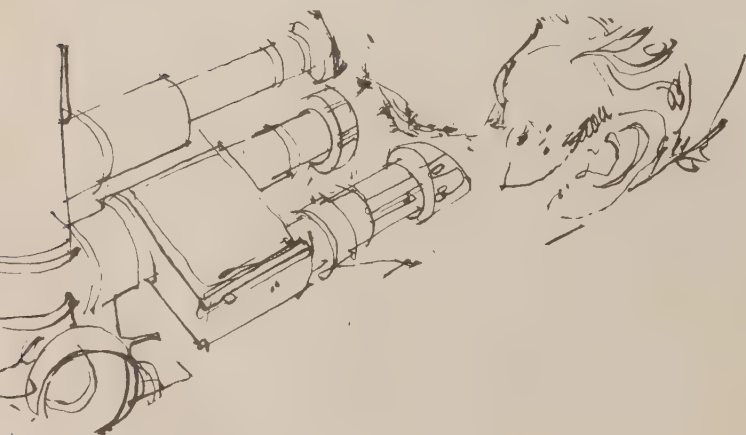
Founding Members / Membres Originaires	\$10,000 and over / et p
Patrons / Commanditaires	\$ 5,000 - \$9,999
Benefactors / Bienfaiteurs	\$ 3,500 - \$4,999
Sustaining Members / Membres de Soutien	\$ 2,000 - \$3,499
Supporting Members / Collaborateurs	\$ 1,000 - \$1,999
Contributing Members / Donateurs	\$ 500 - \$ 999
Subscribers / Adherents	\$ 100 - \$ 499

SUPPORTING MEMBERS / COLLABORATEURS

- A-Dec Inc., Newberg, Oreg.
- Alberta Dental Association, Edmonton, Alta.
- Canadian Dental Hygienists' Association
- Canadian Dental Service Plans Inc., Toronto, Ont.
- Coe Laboratories Inc., Chicago, Ill.
- College of Dental Surgeons of British Columbia, Vancouver, B.C.
- Dental Depot (Canada) Ltd., Montreal, Que.
- Dental Supplies Ltd., St. John's, Nfld.
- Guardian Insurance Company of Canada, Toronto, Ont.
- Healthco (Canada) Ltd., Montreal, Que.
- Ontario Dental Association, Toronto, Ont.
- Royal College of Dental Surgeons of Ontario, Toronto, Ont.
- Sybron Dental Products Division Canada (Kerr/Ritter), Toronto, Ont.
- Teledyne Dental, Saratoga, Cal.

CONTRIBUTING MEMBERS / DONATEURS

- Astra Chemicals Ltd., Mississauga, Ont.
- Butler, John O. Company, Montreal, Que.
- Canadian Dental Association, Ottawa, Ont.
- Canadian Dental Supply Ltd., Vancouver, B.C.
- Coca-Cola Ltd., Toronto, Ont.
- College of Dental Surgeons of Saskatchewan, Saskatoon, Sask.
- Great-West Life Assurance Company, Winnipeg, Man.
- Hiram Walker & Sons Ltd., Toronto, Ont.
- International College of Dentists, Canadian Section, Toronto, Ont.
- Johnson & Johnson Ltd., Montreal, Que.
- Manitoba Dental Association, Winnipeg, Man.
- National Refining Company Ltd., Toronto, Ont.
- Nova Scotia Dental Association, Halifax, N.S.
- Novocol Chemical Mfg. Company of Canada Ltd., Toronto, Ont.
- Royal Trust Corporation of Canada, Toronto, Ont.
- White, S. S. Dental Division, Etobicoke, Ont.



● Contributor for 10 years or more

● Donateur depuis 10 ans ou plus

SUBSCRIBERS / ADHERENTS

Academy of Dentistry, Toronto, Ont.
 Alpha Omega Foundation Inc., New York, N.Y.
 Amers Dental Products Ltd., Morrisburg, Ont.
 British Columbia Dental Hygienists' Association, Vancouver, B.C.
 Canada Dental Ltd., Montreal, Que.
 Canadian Association of Orthodontists
 Central Dental Ltd., Toronto, Ont.
 CL - Medical Leasing Service, Toronto, Ont.
 Columbia Dentoform Corporation, New York, N.Y.
 Cook-Waite Laboratories, Aurora, Ont.
 Cr-Tal-Ez Manufacturing Company, Des Moines, Iowa
 Cst, Charles E. & Company, Pointe Claire-Dorval, Que.
 Halifax County Dental Society, Halifax, N.S.
 Cyt Laboratories, Needham, Mass.
 C-Friedy, Chicago, Ill.
 Cgenic Corporation, Akron, Ohio
 Commercial Life Assurance Company of Canada, Toronto, Ont.
 Coner-Unitek Canada Ltd., Toronto, Ont.
 Conko, J. F. & Company, New Rochelle, N.Y.
 Conch, Charles A. & Associates Ltd., Toronto, Ont.
 Condak Canada Ltd., Toronto, Ont.
 Conder Detergents Ltd., Toronto, Ont.
 Condon & District Dental Society, London, Ont.
 Cox & Zwingenberger Ltd., Toronto, Ont.
 COT Corporation, El Segundo, Cal.
 Cudular & Custom Cabinets Ltd., Concord, Ont.
 Concton Dental Society, Moncton, N.B.
 Cerson Inter-American Corporation, Cambridge, Mass.
 Cw Brunswick Dental Society, Rothesay, N.B.
 Cwfoundland Dental Association, St. John's Nfld.
 Ctarario Dental Hygienists' Association, Toronto, Ont.
 Ctarario Dental Nurses & Assistants Association, Toronto, Ont.
 Cngst & Company Inc., South Plainfield, N.J.
 Csen & Furie Dental Laboratories Ltd., Toronto, Ont.
 Cgina & District Dental Society, Regina, Sask.
 Ccky Mountain Orthodontics Canada Ltd., Toronto, Ont.
 Cyal Bank of Canada, Toronto, Ont.
 Caw Laboratories Ltd., Toronto, Ont.
 Cerwood Medical, St. Louis, Mo.
 Cofu Dental Corporation, Menlo Park, Cal.
 Cemens Electric Ltd., Pointe Claire, Que.
 Cerling Drug Ltd., Aurora, Ont.
 Ckara Company Canada Ltd., Mississauga, Ont.
 C Canada Ltd., London, Ont.
 Cncouver & District Dental Society, Vancouver, B.C.
 Cctoria & District Dental Society, Victoria, B.C.
 Csil Dental Supplies Ltd., Toronto, Ont.
 Caledent International, New York, N.Y.
 Clliams Gold Refining Company of Canada Ltd., Fort Erie, Ont.
 Cright Dental Canada Ltd., Richmond Hill, Ont.



Although individual names are not listed, the Fund also wishes to express grateful appreciation for the many smaller gifts received from various organizations.

Bien que les noms individuels ne soient pas cités, les responsables du Fonds désirent exprimer leur appréciation reconnaissante pour les nombreux dons plus modestes provenant de divers organismes.

Honour Roll Tableau d'Honneur

contributors - dental profession

donateurs - profession dentaire



DENTISTS / DENTISTES

NEWFOUNDLAND / TERRE-NEUVE

Butler, D. G., St. John's
Furlong, R. F., St. John's
Goodwin, W. L., Harbour Grace
Gushue, T. J., St. John's
*Hewitt, G. M. W., Gander
Hunt, B. D., Lewisporte
Kazda, I. K., St. Joseph's
King, J. J., St. John's
MacLeod, R. W., Corner Brook
Manning, B. H., Lumsden
McNally, A. E., Deer Lake
Moolji, N., Holyrood
*O'Brien, P. C. E., St. John's
*Parsons, E. K., Labrador City
*Peters, D. K., St. John's
*Sexton, R. D., Corner Brook
Swan, J. H. S. D., Clarenville
*Trend, J. P., Grand Falls
Walsh, K. F., St. John's
Williams, E. J., St. John's

PRINCE EDWARD ISLAND / ILE DU PRINCE-EDOUARD

Coffin, R. D., Charlottetown
Doiron, J. A., Summerside
Dombowsky, L., Summerside
Duffy, L. I., Charlottetown
Glantz, G., Souris
Kearney, B. P., Charlottetown
MacIntyre, J. P., Charlottetown
MacLean, A. L., Summerside
Maze, D. B., Charlottetown
Porter, P. J., Charlottetown
*Robertson, J. R., Summerside
Romcke, R. G., Charlottetown

NOVA SCOTIA / NOUVELLE ECOSSE

Anderson, N. B., Lunenburg
Barro, W. B., Dartmouth
*Bennett, I. C., Halifax
*Chaytor, D. V., Halifax
Condon, G. W., Kentville
Creaser, B. A., New Germany
Crummey, O. W., Guysborough
Cunningham, D. P., Halifax
Davis, B. C., Halifax
Eaton, D. C., Halifax
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R. L., Penticton
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er, I. M., Victoria
to, R. V., Kamloops
in, D. V., Vancouver
R., Prince George
W., Victoria
n, L. R., Victoria
G., Kelowna
F. W., Coquitlam
ia, N., Vancouver
n, L. W.,
Westminster
R. S., Richmond
G., Richmond
I. W., West Vancouver
A., Vancouver
A., Vancouver
G., San Josef
J. H., Burnaby
ill, R. H., Fernie
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S., Delta
S. Y., Vancouver
C. H., Langley
E. E., West Vancouver
K. H., Burnaby
R. J., West Vancouver
C. J., Victoria
un, G. B., Victoria
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S., Vancouver
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French, S. H., Ottawa, Ont.
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A DENTAL CHAIR MODIFICATION FOR CHILDREN

Dale Scanlan, RDH

There has been a trend away from the paedodontic dental chair over the past several years. In addition, it is not practical for general practitioners to purchase expensive and seldom-used children's dental chairs. This paper outlines the advantages, construction techniques and uses of a variant of the bean-bag chair introduced some years ago¹ and a paediatric dental chair recently described by Ruby².

The bean-bag offers considerably fluid maneuverability to accommodate to different body shapes and sizes. It offers comfort, stability and security to the paediatric patient who may feel he is in danger of falling from some models of modern dental lounge chairs. The beans can be localized under the neck to assist head stability for the clinician. The bag also gives full support to the small of the back and can be shaped and puffed up under the legs to keep them in a flexed position as shown in figure 1. Physiotherapeutic principles hold that the flexed position reduces skeletal muscle tension. This in turn assists children who have difficulties with jaw muscle control³. The comfort and stability aspects are appreciated by patients who have been premedicated or are involved in conscious sedation therapy, as the reduction of tension and stress is maximized.

Construction

Produce a paper pattern of your dental chair three to four cm. in from the edge. Figure 1 shows the bag produced for a Dental-Eze chair and used for handicapped children at the Children's Hospital of Eastern Ontario, Ottawa. The main portion of the bag is constructed of naugahyde. This material is strong, keeps its shape and can be easily cleaned. It

provides the added advantage of protecting the dental chair from scuff marks from children's shoes. The bottom of the bag is cloth chosen to reduce slippage and allow air to escape. This also prevents the seams from ripping and speeds the set of the styrofoam beads. To eliminate the beads' possible escape and to facilitate changing the bead content two zippers are provided to stabilize the bag on the dental chair. Approximately three cubic feet of styrofoam beads are appropriate for the bag shown in figure 2.

Summary

This device provides stability and gentle restraint to the very young active child. It is a valuable adjunct to dental care of the physically handicapped dental patient both paediatric and adult. Finally, it protects the chair surface and serves as a comfortable cushion for patients undergoing long dental procedures or who are being treated while under conscious sedation therapy.

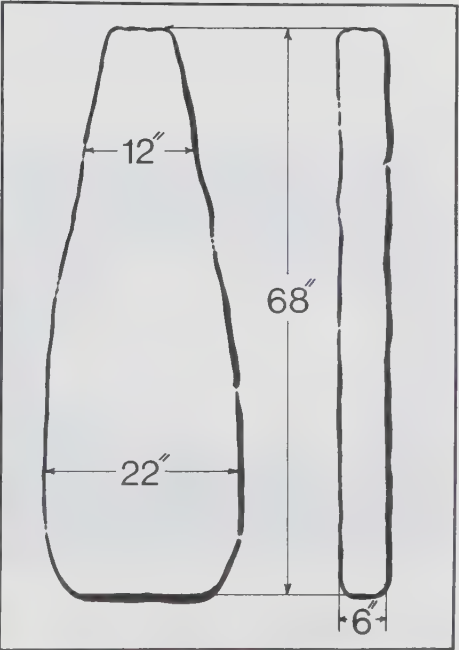
The bean-bag was constructed by Mr. J. Glancy, Nu-Style Upholstering, 265 Chine Drive, Scarborough, Ontario M1M 2L6 and is available on a special order basis. Mrs. Scanlan is a dental hygienist, Division of Dentistry, Children's Hospital of Eastern Ontario, 401 Smyth Road, Ottawa, Ontario K1H 8L1.

- 1 Cramer, J. J. and Wright, S. A. The bean-bag chair and the paedodontic patient with cerebral palsy. *Dent. Hyg.* 49:167, 1975.
- 2 Ruby, J. D. A dental chair design for paediatric dentistry. *J. Paedodontics* 3:52, 1978.
- 3 Finnie, N. R. Handling the young cerebral palsied child at home. 159, London, William Heinemann, 1974.

Fig 1 Removable bean-bag in use to maintain the patient in a flexed position of stability.



Fig 2 Dimensions of bean-bag to fit Dental-Eze chair. Velcro straps may be added for additional stability.



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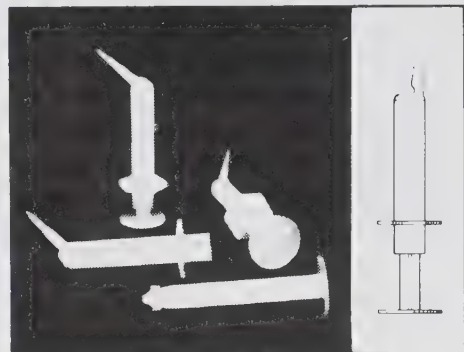
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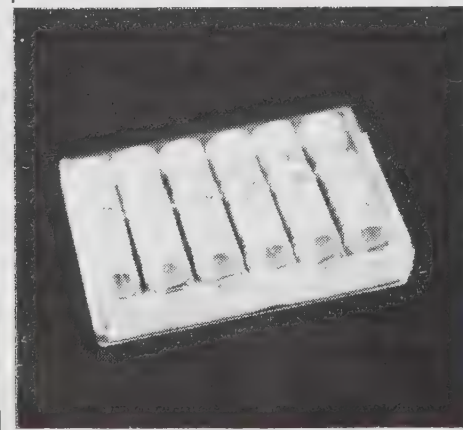
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TEACHING CONFERENCE ON HOSPITAL DENTISTRY

In March 1978, the ACFD/CDA Teaching Conference on "Hospital Dentistry" was held at CDA Headquarters in Ottawa. The Canadian Fund for Dental Education helped to finance the meeting with the aid of a special grant from the Doctor and Gamble Company. Representatives from all Canadian dental schools were present and the Conference was under the chairmanship of Dr. Ralph I. Brooke of the University of Western Ontario. The Journal of the Canadian Dental Association greatly appreciates the work of Dr. Brooke in preparing a report on the activities of the Conference. His report serves as the basis for this issue, which was devoted exclusively to Hospital Dentistry. All the papers

were presented at the Conference. Much valuable discussion followed the presentation of the papers and many of the suggestions helped in the formulation of the recommendations and suggested guidelines for the teaching of Hospital Dentistry. The article by Dr. M. Gornitsky, Chairman of the CDA Council on Hospital Services, illustrates the activities of an active hospital dental department. In view of the current emphasis and practice of hospital dentistry, the Journal is pleased to publish this issue for its readers.

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THE RATIONALE FOR TEACHING DENTAL STUDENTS IN HOSPITALS

Dr. J. H. P. Main
University of Toronto

The rationale for giving dental students part of their education in hospitals is simple, straightforward and, I believe, generally accepted. It consists in the facts that only in hospitals are certain educational opportunities available, and that these opportunities are among those that must be exploited in undergraduate dental education if we are going to satisfactorily train dentists for dental practice as it exists today.

I believe that the educational opportunities for undergraduate dental students may be divided into three broad areas.

The first of these is to observe and participate in the practice of hospital dentistry itself. In an active care general hospital with a fully functioning Department of Dentistry, the following clinical activities are ongoing.

1. The provision of dental care for medically compromised patients.
2. The provision of major oral surgery.
3. The provision of specialist investigation and treatment of the non-surgical, less common oral diseases, the oral medicine or clinical oral pathology case group.
4. The provision of general dentistry for the handicapped, both mentally and physically, including general dentistry under general anaesthesia.
5. The provision of special maxillo-facial prosthetics for patients undergoing major surgery of the face and jaws.
6. The provision of incidental dental care for inpatients.
7. The provision of emergency dental treatment.

Most of these activities are also undertaken in the dental departments of children's hospitals, although there the provision of maxillo-facial prosthetics would usually be for children with congenital abnormalities. None of these activities is carried out in any centre other than in an active care hospital and therefore to make clinical instruction in these areas available to dental students, the students must go to the hospital.

The second major educational opportunity is to receive clinical, bedside teaching in the medical departments of the hospital. In the dental undergraduate course in the University of Toronto, clinical teaching is given in the Departments of Medicine in cardiology, haematology, endocrinology, respirology and dermatology; and in some of the teaching hospitals, other medical disciplines also provide clinical instruction to dental students. Clinical teaching is also given in general and plastic surgery, in otolaryngology and in the emergency departments of the teaching hospitals.

In all dental schools, didactic lectures are given to the

students in general medicine and in general surgery. However, to teach medicine and surgery solely by means of lectures and textbooks without the added enormous benefit of clinical exposure to patients is to reduce the value of the teaching to but a fraction of what it can be. Medical teaching without an integrated clinical exposure to patients can also lead to curious misconceptions and delusions in the students so taught. Henry Adams said that nothing in education is so astonishing as the amount of ignorance that can be accumulated in the form of inert facts. I believe that an attempt to teach medicine and surgery largely didactically without the extensive contact with patients, leads to just this form of ignorance.

The third educational opportunity unique to the hospital is to become familiar with the hospital as an institution, to learn how the different departments are integrated and interact, to become familiar with hospital records and orders, with staffing patterns, with the assessment of patients' medical status from charts and by means of consultations, and with the physical facilities of the hospital itself.

Many dentists in general practice hold part-time hospital appointments. In Ontario over 1000 of the some 4000 dentists have such appointments. It is essential therefore that dental education provide students with the necessary knowledge and experience of the hospital as an institution — and a complex and unique one it is — to enable them to function efficiently in it. To repeat my theme then, none of these three categories of educational opportunity is available in any setting other than in a general hospital. It is, in my view essential that dental students should receive instruction in these three broad areas.

So far, I have restricted my comments to undergraduate dental education but the same arguments apply equally strongly to certain aspects of postgraduate dental education in oral surgery and oral pathology certainly, but also in paedodontics, periodontics and orthodontics. In all these disciplines a certain proportion of postgraduate education and in some a major proportion, has to be given in hospitals as only there are the educational opportunities available.

What is less easy to decide is how much time, from an already crowded undergraduate curriculum, should be assigned to these aspects of dental education. No firm guidelines on the length of exposure have been set by the Association of Canadian Faculties of Dentistry. It must be part of the business of this conference to make recommendations for such guidelines.

THE DENTAL DEPARTMENT, DENTAL STAFF — MEDICAL AND DENTAL FORMS

C. A. Hoffman
McGill University

The Dental Department

Generally, dental departments are organized along one of three different patterns. The first is the small community facility where the organization is simple; basically only departments of medicine and surgery are developed. Such small community centres usually do not justify departmental status, and dentistry would generally serve as a division or section within the department of surgery. This section or division of dentistry would have equal status with that of the other surgical sub-sections. The second type of organization is found in the larger community hospitals where separate departments of medicine, psychiatry, obstetrics, surgery, etc., are being developed. The autonomy of the dental department would be related to its size and function. Small departments, or those restricted to oral surgery, would appropriately be within the department of surgery, again with status equal to that of surgical sub-sections. When we consider the larger departmentalized institutions, which have comprehensive dental services, the third organizational pattern of complete autonomy for the department of dentistry is possible. The chief of the dental service would be responsible for all the individual divisions within his service, with the exception of oral surgery, which would continue to have liaison with the chief of surgery, who is ultimately responsible for all surgery performed within the institution. The internal organization of the dental department permits divisions representing the recognized specialties, to the extent that facilities permit and depend on the needs of the community served.

The designing and equipping of the hospital dental suite necessitates a few special considerations relative to the private dental office. Halls, doorways and operatories should be of sufficient size to accommodate wheel-chairs and stretchers. An operating table should be available, and facilities for radiographic services for the recumbent patient as well as sufficient mobile equipment for bedside and occasionally accessory hospital operating room use.

The dental staff

The chief of the dental service must be confident in hospital procedures. Generally it is the oral surgeon who has had the greater hospital exposure, more so than his counterpart in general practice or some other specialty. I am not suggesting that only oral surgeons be heads of dental departments and, where a general dentistry service exists, a general practitioner would be an ideal selection, assuming he or she has had adequate hospital experience. Certainly

children's hospital dental departments are best served by a paedodontist who is head of that department. The selection of the head of the dental department in a teaching hospital is generally made in consultation with the dean of the affiliated faculty of dentistry, and in the non-teaching hospital, with the credentials committee. The requirements for admission to the hospital dental staff are that the applicant be a graduate of a recognized dental school, be legally licensed to practise dentistry and a member of the appropriate dental association. The hospital's credentials committee will determine the suitability of the applicants and, with the board or governing body of the institution, admit the dentist to the hospital staff on a one-year basis. It is generally routine today in most institutions that re-application for staff appointments is done on a yearly basis. It may be the function of the credentials committee to determine the granting of surgical privileges to the dental staff members, or this may be a function of the head of the department of dentistry, based on the rules and regulations of the dental staff. All dental staff appointments are subject to the hospital bylaws. Not infrequently, the bylaws are poorly prepared as they relate to dentistry. It is important in writing the hospital bylaws to use the term "medical-dental staff" or, if medical staff is used, it should be defined in the preamble as "individuals who are licensed to practise medicine or dentistry". Certainly, in a larger dental department, it would not be incorrect for the department to develop its own bylaws.

In addition to the hospital bylaws the dental staff must develop its own rules and regulations. These will refer to the general qualifications of the applicant as well as the surgical privileges for general dentists and specialists. In these rules and regulations, consideration must also be given to a regular meeting requirement, admission procedures, medical consultations and the management and basic treatment of all dental patients (which must be very explicit).

The complement of the dental staff and auxiliary personnel will be dependent upon the physical and financial facilities which are available as well as the manpower supply and the needs of the community.

Medical and dental forms

We are all aware of the necessity for adequate medical and dental forms and they are essential for continuing patient care, for medical-legal reasons and to satisfy hospital accreditation standards. All inpatients require a physical

examination, performed and recorded by a physician on the hospital staff. The physician's responsibility is to monitor the patient pre- and post-operatively when indicated. Dental examination related to the dental apparatus and para-dental structures as well as the systemic functional inquiries is a responsibility of the dental staff. The inpatient chart includes many other records, such as laboratory findings, consent forms, the doctor's order sheet, etc. Special dental forms for inpatient charts may or may not be necessary. Certainly where the dental service is limited to oral surgery, the basic hospital chart appears to be quite adequate. The general dentistry provided on an inpatient basis will probably require special dental charts from the point of view of reporting restorations to periodontal disease and treatment. If many of our inpatients eventually become outpatients, the availability of records is essential. Certainly the inpatient charts are retrievable for outpatient use but we are all aware that to try to get these charts on short notice is practically impossible. One therefore should consider transferring pertinent information to outpatient charts in those departments where separate outpatient records are maintained. Where the delivery of outpatient services is a chief service of the dental department, one may use the regular hospital outpatient forms, or one can

develop a specific dental record which can be readily available and filed within the dental department. When necessary, the medical inpatient chart could be made available to supplement the dental outpatient chart.

In addition to a well-organized system of recording all activities related to patient care in the hospital chart and being able to readily retrieve this material, one must also consider a method of indexing disease. This includes conditions observed, and treatment ordered. One should be able to review treatment results of specific conditions for statistical analysis. There are different systems available e.g. the international classification of diseases, or one may even develop a system which is suitable to one's own department. Certainly the objective is that information is readily retrievable.

Finally, in summary, the development of a successful dental department, at least comparable to other hospital departments, is based on adequate facilities, staff, bylaws and, above all, the deliverance of superior services to patients and a relationship with our colleagues that establishes dentistry as a vital component of the total health delivery system.

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THE TEACHING OF OUTPATIENT PROCEDURES IN THE UNDERGRADUATE HOSPITAL DENTAL PROGRAM

Dr. G. B. Gibson
University of British Columbia

A satisfactory dental education program will have an effective teaching relationship with an approved hospital. This relationship will afford the student opportunities to provide direct patient care, to participate in the management of those health and social problems of the hospital patient and to learn hospital procedures and medical-dental relationships.

The objective of this experience is to prepare the student to provide comprehensive dental service in the hospitals of the community in which he/she will practise, and to function as a member of a team of health care professionals.

Organization of program

The department of dentistry in a teaching hospital affiliated with a dental school should be organized as an autonomous clinical department and administered by a director of hospital dentistry. The director, or department head, would be directly responsible to the chief of the medical staff for policy covering clinical care of patients, to the administrator of the hospital for admission and budgeting within the department, and to the dean of the faculty of dentistry for the quality and quantity of undergraduate teaching.

The department of dentistry should be organized into sections to conform to the areas of the recognized dental specialties. The heads of these sections would be the corresponding heads of similar sections within the dental school. In addition, all appointments to the active dental staff of the hospital would be from the full-time members of the faculty of dentistry.

Procedures taught — curriculum

It is important to remember that in an undergraduate hospital dental program the emphasis should be primarily on the teaching aspect of the program and secondarily on the service aspect. Thus the quality of the treatment and the student trained supersedes the quantity of treatment and service performed. The hospital dental program should never become burdened with government or administrative pressures to produce a service at the expense of its teaching program.

The primary role of this program is to reinforce in the student the concept of the total patient and application of the biomedical sciences. Specifically, the program will prepare the student to perform, in the hospital, any and all of those functions considered to be part of the general practice of dentistry for those patients whose general and/or dental

health dictates that they must receive treatment in the hospital.

The following specific areas relating to outpatient procedures should be taught as part of the undergraduate hospital dental program.

1. Medical history and physical examination — To supplement lecture and laboratory teaching in the biomedical sciences, the student should be taught physical evaluation methods which will permit him to recognize and understand the pathologic physiology of systemic disease and its influence on oral health and treatment. The physical evaluation of the patient will have particular emphasis on the cardiovascular and respiratory system. It is expected that this experience would include a meaningful hospital rotation where students would have the opportunity to observe and assist in the evaluation of patients. Attention should also be focused on the physiological aspects of patient evaluation.
2. Admission procedures and orders — The admission procedures should include the necessary information required by the physician or dentist, and by the operating room supervisor when a general anaesthetic is anticipated. The students should be taught how to complete the patient's medical record, giving admission, preoperative, post-operative and discharge orders, as well as a comprehensive operative report. They should also be aware of the mechanisms for obtaining a history, physical examination and specified laboratory tests for the outpatient scheduled for all types of anaesthesia other than local infiltration.
3. Laboratory tests — Experience in clinical laboratory science emphasizing the mechanisms related to ordering laboratory examinations and tests, and the ability to interpret and utilize laboratory data should be included.
4. The areas of pharmacology and pain control should be reinforced in the hospital education program.
5. Where indicated, the student should be taught to carry out operating room procedures and techniques.
6. Management of the cerebral palsy, mentally retarded, cleft palate, emotionally disturbed, haemophiliac and other medically compromised and high risk patients requiring hospitalization for proper performance dental care should be taught.
7. Specific outpatient dental procedures should be included in such disciplines as paedodontics, radiology, oral pathology, oral surgery, periodontics, oral hygiene and restorative dentistry.

THE TEACHING OF ANAESTHESIA TO DENTAL STUDENTS IN HOSPITAL

Dr. G. Albert
University of Montreal

The objective of teaching anaesthesia to dental students is not to develop dentists capable of rendering proficient anaesthesia to their patients, but rather to expose them to the subject. Most important though is that the exposure, through a proper teaching mechanism, will enable the students to review basic sciences and apply the subject matter clinically. In addition, the management of pain and anxiety is becoming a greater concern to the dentist and the patient. Many drugs are offered in the dental office through different forms of administration (oral and intravenous sedation, relative analgesia and local and general anaesthesia), but many patients are refused an anaesthetic or are improperly prepared because of poor patient evaluation mechanisms. •

The question arises then: why teach anaesthesia in a hospital environment? There is a greater source of patients in the hospital, since the selection process is quite different from that found in most dental practices. Patients include those with medical problems, mental and physical handicaps and a large number of emergencies; and one finds a conglomerate of health science professionals and special-

ists, including dentists, who are working towards the same goal. I am not implying that the university does not have this responsibility, on the contrary the teaching of anaesthesia includes the number of prerequisites offered by the University — courses include anatomy, neuroanatomy, physiology, pharmacology and behavioural sciences.

Supervised instruction in the hospital should include safety, patient evaluation, diagnostic orders, therapeutic orders, operating room protocol, preparation prior to the anaesthesia, stages of anaesthesia, drug reactions, intravenous injection technique, and the difference between analgesia and anaesthesia. In addition, there must be an appreciation of drug utilization, the effects of medications, and the overall economic and physical factors which influence the treatment of the patient.

Thus the teaching of anaesthesia is not only the demonstration of the technique, but rather a planned sequence of events that set in action a series of mechanisms that are necessary in daily physical practice in a dental school.

Outpatient procedures . . .

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The responsibility for the teaching of the preceding subjects is ultimately that of the director of hospital dentistry. Obviously he/she will arrange for whatever expertise is required to teach these subjects.

Time allotment

Sufficient time in the undergraduate dental curriculum should be allotted to teaching hospital dentistry. This would amount to at least a two-week rotation or two full days per month for third and fourth year students.

Teaching facilities required

In combination with other dental services, an outpatient dental clinic in the hospital should be located in an area approximating other ambulatory care facilities. Wherever possible, services and areas which are already existent in, or provided by the hospital and which are required by dentistry, should be shared to avoid duplication of such services and space. Examples would be central sterilization, admitting areas, radiology and seminar teaching rooms.

Minimal space requirements would be as follows: (1) 1000 square feet for administrative offices, seminar rooms, study

area, locker room; (2) 1500 square feet for a hospital dental clinic, to include three large operatories (one equipped for general anaesthesia procedures), surgical scrub area, laboratory, dark room, storage, reception and services areas.

Source and type of patient

The major source of patients for a teaching hospital outpatient dental clinic would be its affiliated dental school. These patients, as well as those from other sources, would be primarily ambulatory patients who require dental treatment in hospital and with dental-oral conditions of considerable interest from a teaching or research point of view.

Other sources would be: (1) accident victims who have sustained injuries to dental structures which necessitate immediate treatment; (2) inpatients of the hospital requiring emergency care; (3) outpatients with dental conditions requiring special consultative or treatment services not readily available in the community who are referred by private health practitioners; and (4) outpatients whose general physical condition is such that adequate dental care from available sources in the community is not possible nor safe.

THE TEACHING OF INPATIENT MANAGEMENT IN THE UNDERGRADUATE HOSPITAL DENTAL PROGRAM

Dr. L. Dufour
Laval University

To provide proper teaching to dental students concerning hospitalized patients is a real challenge. This teaching, however, is essential to the general practitioner.

The teaching dispensed to the undergraduate students is twofold: medical and dental.

Medical

) If it concerns a patient admitted for medical treatment and its control.

i) If it is provided by medical personnel. Example: rotating internship: Internal medicine — anaesthesia, pediatrics.

Dental

) If it is provided by dental personnel for hospitalized patients.

i) If it is provided by dental personnel for hospital dental services. Example: rotating internship in a hospital dental clinic.

The ratio of these two facets of hospital teaching must take into account the former general formation of the dental student as well as the possibilities of human and physical resources. This is why, under certain circumstances, the teaching of hospital behaviour and treatment of hospitalized patients may be almost exclusively medical, whereas in other centres or programs it may be mostly dental. However, one may be as good as the other.

Aims

Hospital teaching is provided *in situ*. Interns spend a year after their theoretical training learning to deal with patients and applying their knowledge under proper leadership. This is where they learn the human aspect of medicine. As far as the dental student is concerned, teaching him how to deal with the hospitalized patient gives him an opportunity to: (1) become familiar with the patient's medical history, (2) become aware of certain symptoms and indications of systemic diseases, and (3) determine when and how to consult with other disciplines in certain cases.

Moreover, this hospital training provides the student with the opportunity to study the great number of patients admitted to hospital; he should therefore be more aware of which dental patient should be treated as an inpatient.

During this training, the undergraduate student will see how his teachers deal with the pre- and post-operative patients and will learn how to manage them. Patients presenting with systemic problems and having to be followed up closely will serve as a practical lesson for the student when he has to deal with similar cases in the future.

We all know how many different items constitute the

medical file of hospitalized patients, from the admission note to the discharge summary. Although the teaching of these files and their contents is provided in dental schools, it is only in the hospital environment that the student will learn how to use them in a pertinent fashion.

Also, it is good for the student to momentarily leave the dental faculty or school and be exposed to the multi-disciplinary health team; this is the only way in which the future dentist will find where he fits in and will be made aware of his privileges as well as his duties within this team.

Types of hospital training

The busy general hospital and the centre for chronically ill patients will present different challenges as well as different types of treatment.

The general hospital with a busy emergency service will normally call for emergency treatment on an outpatient basis. However, a well organized dental department will also provide comprehensive care, as do the different medical disciplines. And for certain cases, there will be a direct contact and relationship with medical specialties, i.e. ENT, cancer clinics, internal medicine, general surgery, etc.

The hospital for the chronically ill presents a different challenge to the dental personnel, in the sense that treatment will be mostly directed towards prevention and the maintenance of oral health. The type of treatment will be directly related to the patient concerned, i.e. geriatric, mentally retarded, etc. The type of hospital dental care provided will therefore be related to the patient and the possibility of rendering such care, as well as the prognosis of the dental care that can be provided.

The choice of hospital for undergraduate students depends on many different factors, one of which, and not the least, is the presence of well qualified teaching personnel on the staff.

All hospitals do resemble one another, as far as routine is concerned, meaning services, departments, laboratories and it is a good thing that a student be exposed to both types discussed above.

Teacher's competency

Our undergraduate students are young people who do not yet possess the maturity and/or the critical sense necessary to be exposed to different techniques, theories and philosophies. It is therefore important that there be an excellent relationship between the professor at the faculty and the professor at the hospital. One should know what the other

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GENERAL PRACTICE EXTERNSHIPS AND INTERNSHIPS IN DENTISTRY

Dr. E. P. Millar
McGill University

The topic of general practice externships and internships in dentistry, although a vast one, is one which I believe to be of utmost importance in any discussion dealing with dental education in Canadian hospitals.

While dental educators can readily see the advantage of increased contact with hospitals and the benefits which can result from the training of undergraduate and graduate students, it is my belief that the basic personnel of the hospital dental department are the dental residents or interns. It is on these people that the future of hospital dentistry will be based, for they are the people who, during their training, will represent our profession, well or otherwise; and will be counted on to staff our dental departments in the future, and, in some cases, hopefully participate in some hospital teaching programs.

First of all, it is important to try to come to grips with current terminology.

Dental extern — A seldom-used term in some areas of this country. It can refer to an undergraduate who is temporarily assigned to a hospital clinic or private office. It may refer to a dentist who has a temporary posting to an institution other than his "home base".

Dental intern, dental resident — In many areas these two terms are used interchangeably, as the duties and the responsibilities are the same. In other areas, the dental intern would be the first-year person and the dental resident the second-year person. And in yet other regions the dental intern would be a graduate dentist who does not hold a provincial licence, and the dental resident would be a person who holds a license, although both of these individuals will be following essentially the same course of study. In the same vein, the terms "rotating dental internship" and "general practice residency" are used almost interchangeably. There is a feeling that since the graduate dentist does not require a year of hospital experience prior to licensure, the term dental resident is more appropriate than dental intern. In any case, on July 1, 1974, the ADA officially changed its designation of the first year of dental house staff service from dental intern to dental resident. It might be wise for us to consider a similar designation in order to avoid further confusion. At the present time the ADA defines a dental residency program as "a form of post-doctoral professional education which offers special opportunity for advanced, comprehensive clinical experience in a hospital, and additional training in the sciences basic to dental practice."

The one-year dental internship or residency program is not really a new phenomenon in this country. At one of the Montreal hospitals, dental interns have been a part of the hospital house staff for over 50 years, and although this hospital is a university teaching hospital, there existed no affiliation with the Faculty of Dentistry until very recently. The type of training was basically "learning by doing," supplemented by the advice and assistance of one or more of the attending staff, whenever they appeared on the scene to treat one of their private patients or to answer a request for consultation from another service. Without a doubt, many dentists benefitted greatly by this opportunity, even though the system was based on "The School of Hard Knocks". We all should be indebted to these pioneers for their perseverance, for they still provide the corps of teachers for our more structured programs of today.

The present graduate is not willing to submit to this haphazard type of training. He wants a proper balance between clinical dentistry and academics, and a definite amount of time devoted to disciplines other than dentistry with the necessary teaching expertise which should accompany such a program.

The interest is there, but are we ready and able to provide what is being asked of us? Where are we going in 1979? We now have guidelines to follow, national and provincial accreditation, and a seemingly increased amount of interest on the part of the graduating dentist in pursuing an additional hospital year. The plan has been established, but how regularly is it being implemented? How many hospital dental departments have received national or provincial accreditation? Of these departments, how many have a viable internship-residency program? Of these programs, how many are accredited and how many positions are available annually to our graduating students? It is my feeling that this type of information should be very readily obtained. I doubt that the available information is either up-to-date or accurate, despite the fact that the CDA Council on Hospital Dental Service has been directed by knowledgeable and dedicated men for years.

The way was shown in 1969 with the publication of the Report on the Role of Hospitals in Dental Education. This conference was chaired by Dr. A Parnell and was sponsored by the CDA Council on Education. The recommendations made then are just as valid today. A review of CDA statistics, however, tends to point out two facts: (1) there seems to be little, if any, incentive to request CDA accreditation of

hospital dental services and internship programs. In 1973, following a CDA survey, only 25 of 169 Canadian hospital dental services were CDA accredited. (2) The number of CDA accredited internship programs is actually decreasing rather than increasing over the years: 1975 — 13, 1976 — 10, 1977 — 10. I cannot even tell you the number of positions available annually in CDA-approved rotating internship programs.

It would seem, therefore, that neither the Canadian hospitals nor the dental profession, government, or the Canadian faculties of dentistry are really making substantial headway in the creation of hospital dental departments which are large enough, or well enough staffed, to be able to mount the type of educational programs which can meet modern standards.

If the one-year postdoctoral program is of value, and I firmly believe that it is, then why are we falling short?

To be successful, the dental internship program must have:

- 1) an interested hospital which will provide space, staff and facilities;
- 2) an interested government which will subsidize, at least in part, the operation of such a unit;
- 3) an interested dental profession which will devote time and energy to providing the necessary teachers.

It is my feeling that a program can be successful without the active participation of university staff; however, one must realize that the burden of teaching postdoctoral students cannot be supported by the dental community at large without the input from, at least, a few key dental educators. In other words, we demand professional teachers for undergraduate students, but accept dentists with no teaching experience for postgraduate students.

At this time of economic difficulties and strong pressures on health professionals to curtail expenses, it is hardly surprising that hospitals and governments show little enthusiasm for programs which may help the dental profession but which may not appreciably increase the number of patients treated. The emergency coverage, however, will definitely improve if a large enough department can be established.

Unfortunately, the hospital's decision whether to provide adequate facilities for a dental training program is based

solely on the amount of interest which can be generated at the local level. As far as I know, no national or provincial body will insist that a hospital have an accredited dental department, far less an accredited internship-residency program. This brings up the age-old question of dentistry's involvement with bodies such as the Canadian Council on Hospital Accreditation.

I should like to mention a particularly controversial aspect of dental education in hospitals which needs some discussion and, hopefully, some action taken; and that is, the role of the accredited internship program in preparing the foreign graduate for national or provincial board examinations.

I have been very fortunate to have been associated with a number of foreign dental graduates over the years, who have used their hospital experience to aid them in preparing for Canadian licensure. Many are a credit to the profession and the hospital in which they served. Notwithstanding these pleasant experiences, it is my firm belief that the training programs in our hospitals are there to provide the Canadian graduate with an additional year of clinical and didactic experience. The programs should be established and accredited with this in mind. If foreign graduates can meet these standards, then they should be considered on the same basis as anyone else. However, to expect the dental departments of our hospitals to be a preparatory school for Board examinations is not fair to the hospital, the North American graduate, the teaching staff, or the aspiring candidates.

What does the future hold in store? I can sense an increased interest on the part of teaching hospitals to include dental education in the overall picture of health sciences education. I can sense a degree of acceptance of this principle coming from my medical colleagues, although the battle for space and dollars will continue to pose problems for any new and developing department. I can sense a willingness on the part of dental educators to leave the "hallowed halls" and become involved in hospital teaching. Where will all of this lead? Hopefully to an increasing number of available dental internships or residencies, so that the graduate of tomorrow will be able to pursue an additional year with a realistic chance of being accepted into a well-organized and properly conducted program.

Inpatient management . . .

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teaches and vice versa. The hospital teacher must not forget that he is dealing with undergraduate students and must realize that these same students are there to learn hospital dentistry and interrelationship.

A number of general practitioners we know on hospital staffs are doing an excellent job. The dental school dealing with these professionals is fortunate. Quite often, though, dental specialists are on hospital staff, and necessarily, the teaching provided is confined primarily to one's specialty.

Teaching level

We believe the senior student will benefit most from

hospital exposure. The junior student is still learning to master basic techniques, is involved in a lot of theory and is not quite ready to face the "facts of life". The senior student can better apply his theory and profit from the practical teaching to which he is exposed. He is also more at ease in the hospital environment from the mere fact that he is a senior, and he can appreciate the hospital teaching which is not scheduled as rigidly as the dental faculty.

Consequently, our philosophy is that the senior student will learn more, be a better student, be closer to practice, and as such, will profit more from his exposure to a hospital environment.

THE TEACHING OF GENERAL MEDICINE AND OTHER DISCIPLINES TO DENTAL STUDENTS IN HOSPITALS

Dr. D. Wedgwood
University of Manitoba

I will begin by presenting the current practice of teaching general medicine and other disciplines to dental students in hospitals in Manitoba and then go on to make some suggestions as to possible changes which are mainly my own opinions and not those of the Faculty of Dentistry.

(a) Undergraduate Students

Most of the medicine, surgery and pathology is taught in the form of lecture courses in second year. There is no direct contact with the clinical application of these disciplines. During the past two years, a two-week hospital dentistry course has been instituted in Manitoba and a permanent supervisor has recently been appointed. This course is taken in the fourth year. A pre-test is given to the students before they attend the course. The students attend the clinics in the Children's Centre and Adults' Centre of the Health Science Centre in Winnipeg, and from time to time special clinics such as haemophiliac and cleft palate clinics as they are available.

The students also attend seminars in the department of dentistry and from time to time other seminars or lectures in the department of surgery. They also present seminars on selected topics in hospital dentistry.

b) Interns

They attend lectures on clinical topics in surgery and applied basic sciences which are given in the hospital under the aegis of the department of surgery. They also attend grand rounds in surgery where various topics are presented by the different services. They have a rotation in anaesthesia full time for a month, where they review pharmacology and have intensive instruction in the administration of anaesthesia, particularly with regard to the care of airways and the treatment of emergencies.

We recently started a short rotation in haematology, at present only for a one-week period. This is something that we would like to develop. There is also a course in general and oral pathology, given partly by the staff of the Faculty of Dentistry and partly by the pathologists in the hospital in the Faculty of Medicine.

c) Residents in oral surgery

In addition to the above lectures, seminars, etc., the residents in oral surgery complete the course in clinical

skills of the Faculty of Medicine, in which they learn the complete physical examination of the patient. Further medical teaching is acquired through a course of lectures in oral maxillo-facial surgery. There is a three-month rotation in anaesthesia.

In the coming year we expect that one of the two weeks will be spent in the Department of Anaesthesia. This has previously been in effect but has lapsed because of internal problems. I would like to see an inclusion of lectures in clinical medicine and surgery, as outlined by Dr. Main.

Another suggestion which comes from the Department of Anaesthesia is that of the "dental anaesthetist". This person would be a dentist trained by the department of anaesthesia to teach and administer dental anaesthesia in the hospital and the Faculty of Dentistry. There is no doubt that such an individual would be a great asset to the faculty, teaching pain control, sedation and anaesthesia to undergraduates and other dentists, but I have some reservations about this in regard to the individual himself. I have seen people, both in North America and Britain, who have gone this route and who have been trained as a "dental anaesthetist" and have become "trapped in a little cul de sac." They cannot work anywhere but in a faculty of dentistry because they are not accepted by the general anaesthetic establishment when they move out of this restricted milieu.

Many of the things which are mentioned are recent changes for the interns and residents and so we are not planning any further changes at present. There is no doubt that after a review and further discussion with the chiefs of service in dentistry and surgery and with the associate dean of post-graduate medical education, further changes will be made. We are currently trying to get the physicians to permit oral surgery residents to perform physical examinations.

Finally, I would like to mention something which is a little bit off the subject; that is the necessity for the representation of the Faculty of Dentistry in the teaching hospital at an executive level. I think this is very important in developing hospital dentistry, and a useful liaison between the Faculty of Dentistry and the hospital and the Faculty of Medicine. I think also that it is very important that the Dean of Dentistry is on the board of the hospital.

WHAT THE GRADUATE IN DENTISTRY SHOULD BE CAPABLE OF DOING IN THE HOSPITAL SETTING — THE AIMS OF THE HOSPITAL DENTAL PROGRAM

Dr. K. M. Gordon
University of Alberta

I think it can be assumed that the dental graduate of today has a good grounding in basic sciences and has acquired the technical skills to practise his chosen profession in a private practice. However, he has learned this in a very protective environment where healthy patients have been carefully screened and are well motivated.

The hospital setting requires much more. The dental graduate must be thoroughly indoctrinated with the basic and fundamental thought that the only reason for being a dentist, that is, a health professional, is that of assuming some responsibility for the patients' total health care.

A graduate in dentistry should have a knowledge of the organization of a hospital and should understand the inter-relationships with various departments and services. He should know how to apply for hospital privileges and the categories, responsibilities and privileges of hospital medical staff, including internships and residencies. He should be capable of reading hospital charts and of understanding the medical implications of his diagnosis and treatment plans. He should be capable of ordering and performing tests for infection, haemorrhagic disorders, exfoliative cytology, recognize and detect blood dyscrasias, neoplasms, hormonal and nutritional imbalances and obtain tissue through biopsy.

A graduate should be capable of extra-oral radiographic techniques and the interpretation of the films obtained to assist in diagnosis and treatment planning. In the hospital he should be able to diagnose and treat patients in pain, provide emergency care, arrest haemorrhage and control pain. He should recognize signs and symptoms of shock and other emergency medical problems and be able to perform initial emergency treatment.

He should be capable of diagnosing and treating facial injuries, including fractures, care of wounds by cleansing and suturing, provide basic oral surgery and know the techniques of suturing, splinting and methods of fixation. In the field of prosthetics, he should be able to design and construct splints, occlusion stabilizers and obturators, as

well as routine prosthetics of relining and construction of dentures.

The dental graduate should be capable of working in a hospital operating room, observing O.R. protocol and sterile procedures. He should know the techniques and methods of general anaesthesia, including intubation, venipuncture and even tracheotomy and resuscitation procedures. He should be able to perform oral surgery and full mouth dental rehabilitation with a patient prone under general anaesthesia.

There should be a good knowledge of drugs, their uses and contraindications, and how to obtain drug information through the use of the Compendium of Pharmaceuticals and Specialties and write preoperative and postoperative orders and prescriptions.

The graduate in dentistry should recognize that it is not always possible to use ideal treatment plans as taught in his dental school, but must develop treatment based on the medical treatment of the patient. Above all, he should recognize his own limitations and know when and where to seek help.

Aims of a hospital dental program

- 1) Provide a facility for dental care in the hospital.
- 2) Provide emergency dental care in the community.
- 3) Develop an adequate dental staff to cover specialty areas of dentistry to provide:
 - a) a high standard of patient care,
 - b) consultations with medical and dental staff,
 - c) a teaching facility for undergraduate students,
 - d) a vehicle for continuing dental education,
 - e) a program for internships and residencies,
 - f) cooperation with the hospital administration and other departments of the hospital, and
 - g) liaison with the dental school or faculty.
- 4) Initiate and develop dental prevention programs in the community.
- 5) Interest more dentists in providing hospital dental services.

OPERATING ROOM PROTOCOL IN THE UNDERGRADUATE DENTAL CURRICULUM

Dr. A. G. Parnell
University of Western Ontario

In discussing operating room protocol I feel one should concentrate on six main topics:

- a) The coverage of certain areas, e.g. hair, shoes, face and glasses.
- b) The pre-surgical scrub.
- c) Gowning.
- d) Gloving.
- e) The development of the surgical site.
- f) The removal of the gown and gloves.

One of the most important things we must instil into our undergraduates is that they cannot take shortcuts in the sterile technique. If they are going to go into the operating room they must work in exactly the same manner as any other surgeon.

Initially, in our unit, the chief operating room nurse would delegate an O.R. nurse to teach the dental students scrubbing and gowning prior to entering the operating room. I found, however, that students trained in this way were not fully aware of the importance of a sterile technique and might contaminate a case inadvertently. We therefore have started to instruct our students in lecture-demonstrations before they attend the operating room so that they at least know the ground rules and have had some practice in the procedures involved.

It is important to stress that once the student has established the sterile field, anyone entering it must be correctly scrubbed, gowned and masked. They should understand the sterile and non-sterile areas around the patient. Sterile personnel must never reach over an unsterile area and conversely an unsterile member of staff must not reach over a sterile area. If one person passes another it is best done back to back. If anyone breaks the protocol of the operating room there is no alternative but for him to be sent outside and be completely rescrubbed and regowned. It is up to the surgeon

to see that these rigid standards are maintained.

Once a sterile area is set up, all doors and corridors must be kept closed to prevent too much air circulating around and dust settling on the sterile area. The student must understand that a sterile gown is only sterile down as far as the waist and anything below the waist is considered unsterile. There are a few times in minor oral surgery where one has a sterile area that becomes really wet, but in major oral surgery it is not too uncommon, and I think emphasis must be made here that moisture conveys and supports bacteria. Therefore if a sterile area gets very wet it should be considered to be contaminated.

The surgical scrub should be three minutes in length. In some hospitals it is a five-minute period but this is not really necessary. The student must be correctly instructed and know how to proceed from the surgical scrub with hands up, so that any drips go over the elbows and onto the floor. He must walk into the operating room with the hands up and away from the body. A closed glove technique of gloving is recommended.

We have to supervise the undergraduates when they are in the operating room, and I think one of the best ways of doing this is to actually get them engaged as assistants. Having more than two people observing is a waste of time. The surgeon, one assistant and two observers is the maximum number that can closely observe the operating room session, unless they are with the anaesthetist observing the anaesthesia. It is good to let the undergraduate assist in one way or another, either with suction or retraction, and if there is any breakdown in this protocol to immediately point out the error, which will not usually occur again.

In conclusion I feel that operating room protocol is an important part of hospital dentistry and a useful part of the dental surgeon's training.

SUGGESTED CURRICULA FOR HOSPITAL DENTISTRY

Dr. K. Arora
University of Saskatchewan

Because of the great demand from the students and certain patients in remote areas, there is need for more comprehensive dental services. Emphasis, therefore, will have to be placed on training students in all aspects of dentistry. One area which presently is ignored is hospital dentistry, as this is traditionally meant for interns and residents. Undergraduate students are assigned to the hospital to observe certain traditional aspects of hospital dental services and in most instances this is the extent of teaching in the hospital. To fill this gap and improve the situation, some dental schools are trying to make hospital dental programs mandatory in the form of externships or internships. In our school, we leave this as an elective for the student to take in the last semester of his final year, if he or she so desires. With this changing pattern and the realization that the hospital is an important educational resource area in the community, we should be able to teach undergraduate students many aspects of dentistry in the hospital. Objectives should be to teach the undergraduate student not only hospital protocol and how to evaluate and assess the patient's general medical status for modification of the dental treatment, but also to provide comprehensive dental treatment to chronically disabled, handicapped, anxious and apprehensive patients. The student should also on graduation be able to communicate with other health personnel at a sophisticated level.

With these objectives in mind, it becomes quite a simple matter to decide what should be included in curriculum for hospital dentistry.

1. *Hospital protocol* — knowledge of protocol is essential for working in the hospital. The student should understand:

-) charts — how to read them and how to record data
-) organization of the hospital
-) medico-legal situations
-) laboratories — how to order specific tests
-) consultation — to give one and to request one
-) procedures of admission and discharge of a patient
-) progress notes on the ward.

2. *Physical evaluation* of the hospital patient. The student should be able to:

-) assess the patient's general medical status through records and charts and consultation with interns and residents of different departments;
-) relate the medical status to the required dental services. This can be done best by teaching the student physical diagnosis and internal medicine in didactic and dem-

onstration form, followed by rounds in different areas of medicine.

3. *Operating room procedures* — The student should understand asepsis in the strictest form and be able to apply it. This would include scrubbing, gowning and use of aseptic technique while providing specific dental services in the operating room.

4. *Outpatient dental clinic* — where the student should get a chance to treat the patient comprehensively. This is where handicapped, retarded or chronically ill patients should be assigned to the student. Comprehensive care should include restorative and periodontal treatment, which is generally ignored on this type of patient. In hospital periodontics, disease may be of a systemic origin, or local periodontics may be influenced by systemic disease.

5. *Anaesthesia* — The student should be familiar with pharmacology of different general anaesthetics before he is assigned to the anaesthesia department, where he can observe the administration of general anaesthesia to gain insight into the indications and contraindications for its use. During this assignment, complications associated with the use of such anaesthetics should be discussed and shown if possible. The student should also be familiarized with pre-op preparation including premedication, pre-anaesthetic laboratory tests. Following this, he should assist the dentist or resident (dental) performing dental services under general anaesthesia. He should already be knowledgeable in pain and anxiety control.

6. *Emergency department* — The student should know basic dental and medical emergency procedures before the hospital rotation. He should spend time in this area to observe emergency care and, if possible, take part in simple tasks of emergency care. Any dental emergency could be treated by the student in conjunction with a resident or staff member. This assignment is useful in teaching the use of certain drugs and first aid treatment. It will specifically teach the student some aspects of maxillofacial injuries if encountered during that period. The following procedures related to emergencies should be covered in the curriculum:

- a) admitting emergencies
- b) operative emergencies
- c) postoperative emergencies
- d) medical emergencies.

7. *Cleft palate and bleeding clinic* — Students should be

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SUGGESTED GUIDELINES FOR THE TEACHING OF HOSPITAL DENTISTRY

A. Clinical bedside teaching of medicine

Clinical bedside teaching on medical cases, which are of importance to the dentist, should be undertaken when the student is receiving his lectures in general medicine. The time devoted to this will vary widely with the accessibility of patients and teachers, but it is suggested that the main medical conditions dealt with in the lecture course be illustrated by clinical cases.

This subject has been dealt with more fully in the report on "The Teaching of Physical Diagnosis to Dental Students" which was reviewed by the ACFD at its meeting at The University of Western Ontario in June 1978.

B. Hospital dentistry

It is recommended that, if possible, a four-week period be devoted to hospital dentistry. Ideally, this should be one block of four weeks, but if this is not practicable, the time may be split.

The following subjects should be covered:

1. Hospital protocol

The student should be familiar with and understand the working of the hospital, including the following:

- a. *Charts* — The student should be able to read charts and know how to record appropriate data, including operative reports, progress notes, final summaries and discharge letters.
- b. *General organization of the hospital* — The student should be familiar with the general structure of the hospital and how the Department of Dentistry relates to the other departments.
- c. *Medico-legal aspects* — The student should understand the dentist's responsibility for admissions, joint admission and discharge procedures, consent forms, patient care during anaesthesia etc.
- d. *Laboratories* — The student should be familiar with the procedure for ordering laboratory tests, radiographs, etc., in a hospital environment.
- e. *Consultation* — The student should understand the procedure for giving and requesting consultations.

2. Physical evaluation

The student should be able to make an overall physical evaluation of the hospital patient, enabling him to decide whether or not a patient will require admission for dental treatment, be more suitable for general or local anaesthesia, etc. He thus will be able to assess the patient's general medical status by taking a medical history himself, using the hospital records and charts, and consulting with

physicians of the appropriate departments. He should be able to relate the medical status to the required dental service and necessary supportive care required.

3. Operating room procedures

The student should understand asepsis in its strictest form and be able to apply it when necessary. This includes scrubbing, gowning and the use of aseptic techniques. He should, where possible, assist with oral surgery procedures and have an opportunity to observe major oral surgery.

4. Outpatient dental clinic

- a. Students should be able to observe a full range of hospital outpatient dental services including consultations.
- b. It is hoped that eventually it will be possible to assign, where appropriate, handicapped, retarded or chronically ill patients to these students during their hospital program.
- c. The students will become acquainted with the routine dental treatment of inpatients.

5. Anaesthesia

The student, when possible, will be assigned to the Department of Anaesthesia for a period during his hospital program. He should become familiar with the preoperative preparation of a patient, including pre-medication and the pre-anaesthetic laboratory tests. He should observe the technique for general anaesthesia and gain insight into the indications and contraindications of general anaesthesia for dental operations. During his assignment, the general monitoring of patients who are undergoing general anaesthesia will be demonstrated, and complications associated with the use of general anaesthesia should be discussed.

6. Emergency department

The student should have received the didactic instruction in the treatment of basic dental and medical emergency procedures before the hospital rotation commences. He will observe the emergency care of patients and where possible take part in simple tasks, e.g. suturing. Dental emergencies will be treated by the student in conjunction with a resident or staff member. It is hoped that the student will see maxillo-facial injuries as they present to the Emergency Department. The following procedures related to emergencies should be covered.

- a. Admission procedures
- b. Operative emergencies
- c. Postoperative emergencies
- d. Medical emergencies
- e. Dental emergencies

7. Other clinics

Depending on their availability, it will be useful for students to rotate through the following clinics:

- a. Haematology clinic
- b. Cranio-facial anomalies clinic
- c. Head and neck cancer clinic
- d. Maxillo-facial prosthetics clinic
- e. Diabetic clinic
- f. Pain clinic
- g. Clinico-pathological conferences (especially those held in the Department of Dentistry)

8. Chronic-care patients

The special needs of chronic-care patients and hospitalized children, with regard to their oral hygiene, should be emphasized and demonstrated to the student. Prevention of oral disease in the form of patient and staff education should be outlined.

Suggested curricula . . .

Continued from page 179

rotated through these services for learning proper team approaches to these two aspects of health care of these patients. Group discussion of diagnosis and treatment planning here will be very useful for the student to learn the day-to-day social economic and psychological problems these patients face and how they can be overcome. If time permits, rotation through the Rehabilitation Department and Department of Genetics could be very useful.

3. *Applied nutrition in hospital dentistry* — To maintain fluid balance and prevent nutritional depletion, special diets are prepared and given to a dental patient during the recovery time. This is especially essential for patients with acute infections of the oral cavity; jaw fractures; patients with multiple extractions; and those with orthognathic surgery. Tube and parenteral feeding should be taught to the student.

4. *Preventive dentistry* — A hospital should not be a service treatment area only. Emphasis should also be placed on prevention and it should be built in whereby a student sees this daily and it becomes a part of his or her education. Prevention should be in the form of patient education by the staff and auxiliary, early detection, e.g. examination and cytology of all inpatients if practically feasible; this could also include panorex radiographs.

5. *Clinico-pathological conference and/or pain clinics* — These should be a weekly part of the teaching program of the hospital dental department. We all realize the importance of these two areas; all the interesting teaching cases should be rotated through these conferences or clinics, and the patients thoroughly evaluated and treatment formulated by a group of interested faculty members and students. These CPC's and pain clinics not only teach the students, interns or residents, but are a useful tool for inservice training.

RECOMMENDATIONS

a) Date of acceptance of interns

It was felt very strongly by the Committee that "dental schools across Canada should, where possible, arrange for the acceptance dates for internships to coincide".

b) Residency and internship brochure

There was a recommendation that "a brochure should be compiled by the Canadian Dental Association which sets out all the Canadian residency and internship programs in hospital dentistry which were currently available".

c) Accreditation of schools

It was recommended that "minimum exposure to hospital dentistry should be a pre-requisite for accreditation of a faculty's undergraduate dental program".

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HOSPITAL DENTAL RESIDENCY PROGRAM — WHY?

Mervyn Gornitsky, BSc, DDS, FRCD(C)
Montreal

The role of the general practice residency program in a general hospital milieu is gaining considerably more attention today. The demands of society and the concerns of dentistry with treatment of the medically and physically handicapped patient are causing dental educators to use hospital dental facilities as a vital tool in dental education, both for undergraduate and postgraduate programs. Recent advances in medicine and surgery along with an enlarged geriatric component of the population have forced dentists to deal with an increasing number of medically compromised and ageing patients. What has dentistry done to acknowledge recent demands in these spheres? i.e. the patient with artificial heart valves, the patient on dialysis, those on long-term cortico-steroids, the blood dyscrasias, the genetically handicapped, the senile and the psychotic. The dental profession has trailed the medical profession in making available to the public competent practitioners with sufficient expertise to deal with these people on a rational basis. In too many instances only cursory dental treatment is given, if at all. The dentist is generally ignorant of the specific problem and often considers the special attention or precautions necessary a nuisance in his busy practice. It is in this context that hospital dentistry reaches its zenith.

The dentist must be made aware of his responsibility to the public as a member of the healing arts. Along with the medical responsibilities, what are the social responsibilities of the dental profession? Prior to the advent of Medicare in Canada, the physicians dealt with the financially handicapped patient within the hospital milieu. With over a million Canadians out of work today, and many families at the poverty level, dental health care to these people must necessarily have a low priority. Who is to treat these families, considering that caries is the most common disease of mankind to age 25 and is then superseded by periodontal disease, both treated by the dental profession. I believe the answer lies in the establishment of more hospital-based dental clinics.

Dentistry today is the most expensive health care service available to the population. The working poor are not receiving adequate dental service, and this is because the dental profession, in the main, lacks a social awareness. The oft-heard concern that the hospital dental clinic is competing with the regional dentist is not true. Patients who attend these clinics cannot afford private dentistry, just as prior to Medicare the indigent patient was treated in hospital medical centres by physicians who gave of themselves and

their time to attend to the more unfortunate. In fact, many of the top surgeons and physicians owe their expertise and training to these patients, without whom medical education would be non-existent. Similarly in dentistry, it is impossible to run a comprehensive dental postgraduate program in a hospital milieu without treatment involving the financially handicapped normal patient.

Hospital dental department

I should like to describe the dental department of a major general care hospital which is providing comprehensive dental services to the population at large. This unique dental facility molds together a service and educational component. It is an integrated unit consisting of three geographic full-time dentists, one — the chief of the department, being a certified oral surgeon, the other two being general practitioners. The teaching component consists of two facets: a postgraduate program leading to a certificate in general practice dentistry, and an undergraduate program affiliated with McGill University. The postgraduate program at the Jewish General Hospital, Dental Department, has been in existence since 1969. With the expansion of the dental facility in 1975, the dental program was expanded to include six first-year residents in general practice dentistry and one second-year resident. Whereas the program for the first year is well-defined and structured, the program for the second-year resident is more flexible, and allows for advanced studies and procedures in those disciplines in which the individual either requires more expertise or shows a greater aptitude. He is also expected to teach senior dental students, as well as advise the first-year residents and become liaison between the latter and the staff. The educational component is staffed by 44 part-time dentists including specialists in all disciplines of dentistry.

The General Practice Residency Program and the dental facilities have been accredited by the Canadian Dental Association and by the Quebec Order of Dentists. It is a modern installation and has been devised for the use of four-handed restorative dentistry. The residents have their own dental assistant who works with them. This has increased the efficiency of the unit and has allowed for the integration of more complex dental procedures in a shorter period of time. A demographic study of the patient population being treated shows them to come from nearly every area on the island of Montreal, with the majority within a two-mile radius of the hospital. Besides the financially

compromised patient, we are also seeing the medically compromised person who requires the security of the hospital confines for their dental services, in particular, surgical services. We had established a liaison with the Miriam Home for the Exceptional where the retarded children and adults would be seen at the hospital, so that their immediate needs could be treated. The genetically deficient, medically compromised and the physically compromised patient all require comprehensive dental services which should and could be delivered by the general hospital. Most of these patients receive their dental care under general anaesthesia, in the main operating theatre.

Undergraduate program

The affiliation with McGill University Faculty of Dentistry allows for the rotation on a one-week basis of two senior students of the Faculty, to provide dental services for non-preselected patients. This undergraduate portion which runs for a period of 21 weeks during the academic year involves all senior students. The program adapted for these individuals is one that has been set up in consultation with the dean of the Faculty of Dentistry. The students have a structured program, which is service oriented and adapted to their one-week rotation. To this end all procedures that are done are those that can be concluded in a one-appointment visit. All student procedures are supervised by a staff member who is in attendance specifically for that purpose. Many of our staff personnel have conjoint appointments in the Faculty of Dentistry at McGill University. There is a keen desire to have a somewhat common teaching program at both institutions, so as not to confuse the student with conflicting philosophies, and a desire on the part of our restorative section to assure a complementary teaching program. Our undergraduate program includes operative dentistry, minor periodontal procedures, oral surgery, oral diagnosis and an introduction to family practice medicine, under the tutelage of a medical resident in family practice. All students at the end of their one-week stint at the hospital fill out an evaluation form prepared by the Faculty of Dentistry, which includes comments by the student on the nature of the program, whether beneficial or not, and possible future modifications. It is recognized by all that a one-week period is insufficient to allow the student to integrate himself fully into hospital dentistry, even though he is capably aided by dental assistants and competent dental staff. The one salient complaint throughout all the evaluations is that the program is too short.

Postgraduate program

The postgraduate program is well-defined and highly structured. It extends from July 1 to June 30. Paedodontics and oral diagnosis commence at the beginning of the general practice residency on July 1 and continue to September 1, when they are replaced by crown and bridge and prosthetics. Minor changes in the overall program occur at the end of December. During the year, there is a one-month rotation through general anaesthesia, where the dental resident is out of the dental facility itself. This allows

him to become familiar with resuscitative procedures and to gain expertise in airway management, as well as to become familiar with the pharmacologic properties of various drugs in the conscious and unconscious patient. He is also exposed to operating room procedures and involved with giving intravenous drugs, electrolytes and water balance in the sick and healthy patient. Carried to a private office outside the hospital confines, it will allow the dental practitioner to be cognizant of and to treat dental emergencies in a rather routine fashion.

Consultations between the dental department and the other departments of the hospital are encouraged and the dental resident is expected to carry out all treatment procedures involving the dental inpatient under the watchful guidance of the medical or surgical resident. With oral surgical procedures requiring post-operative surgical intensive care, the dental resident is expected to remain overnight within the hospital so as to be available in case of emergencies. This is in addition to availability for emergency calls through the Emergency Department. To this end we have a 24-hour 7-day a week emergency service. This has been instituted with the aid of a telephone answering service and residents carrying bell-boys so they can be reached at all times at locations within a 30-mile radius of Montreal. The resident on emergency duty is always backed up by a staff oral surgeon who can and must be called in cases of trauma, or in other circumstances where the expertise of the resident would be insufficient to handle the particular problem.

The geographic full-time general dentist, besides being available in a teaching capacity, handles specific types of indigent and immigrant patients. This segment of the population receives priority care because their needs tend to be the greatest and their financial resources upon emigrating to Canada are presumably least. Social welfare agencies, the social welfare patient and the working poor are all accepted and given dental care at reduced fees. The fee structure itself is approximately one-third of that in a private dental office. We try through our financial assessment officer to restrict the dental services to those who are the neediest, so as not to compete with the practitioner dentist in the locality in which the hospital is situated. As a hospital, however, we must accept all patients who apply for emergency services. At present the dental facility is recording more than 15,000 patient visits annually, even though some of our disciplines are long-term with low patient-visit statistics numerically.

This clinic facility is not oriented towards prevention education, but rather towards curative services. Thus our primary goal is to treat pathology. It is the philosophy of the full-time staff to relegate prevention education to the primary and secondary schools in the area, as we believe that in these locations it would have the greatest effect. Where pathology is so extensive that a large proportion of the population is suffering either from dental caries or periodontal disease and where manpower is so deficient, it would be foolish to use a dentist whose expertise is in treating and

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curing pathology to act as an educator. This can be better done by ancillary personnel trained specifically in this field. Thus prevention is practised only as it applies to the individual patient who is undergoing treatment. At this time he or she is made well aware of the necessity of maintaining good oral hygiene in order to receive long-term benefits from the dental services provided. It would be just as foolish to spend many hours and much money on those people who regard their oral health lightly. Thus we try to provide a common-sense type of dental service utilizing the latest in dental techniques along with a rehabilitative and preventive component.

In conclusion, I should like to reiterate the importance of the general practice residency in the hospital dental service or department in meeting the specific needs of the population for whom there are insufficient facilities and the lack of knowledgeable staff to treat them adequately. The purpose of the general practice residency is to produce a competent highly-qualified general dentist with the knowledge of dealing with more complex patient problems, both medically and dentally, and to become involved as an educator, either for undergraduate or postgraduate students. These are the future nuclei for a new breed of dentist to treat those patients who demand additional expertise not available in undergraduate training. Hopefully the provincial governments and the dental profession will realize the importance of hospital dental practice in the overall health care system, and will allow the dental profession to assume its rightful place as part of a hospital health care team in the treatment of those patients demanding extraordinary care and concern.

Dr. Gornitsky is chief, Department of Dentistry, Jewish General Hospital, Montreal, Que. H3S 1Y9; Chairman, Council on Hospital Services, CDA; and assistant professor, McGill University, Montreal.

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PIÉZOÉLECTRICITÉ ET MOUVEMENT DENTAIRE

Dr. André Fournier
École de médecine dentaire
Université Laval
Québec

Resumé

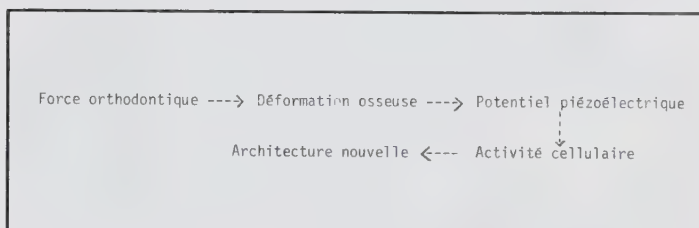
Lors de la déformation d'organes biologiques tels les os, il y a production de potentiels électriques. Cet article se veut une revue de la littérature concernant les sources possibles de la piézoélectricité et les effets, directs et/ou indirects sur les fibres de collagène et les cellules. Nous rechercherons la relation possible entre la piézoélectricité et le mouvement dentaire en évaluant 1) la piézoélectricité des tissus dentaires et 2) les potentiels de l'os alvéolaire.

Introduction

L'orthodontie est une science clinique qui s'est développée de façon empirique, mais aussi grâce à des expérimentations provoquées et à l'observation de phénomènes physiologiques. On a donc su très vite qu'il était possible de bouger les dents, sans pour autant comprendre les phénomènes homéostasiques sous-jacents. En 1928, Walkoff propose une première théorie selon laquelle le mouvement dentaire serait causé par l'élasticité et la compressibilité de l'os: après le mouvement de la dent, l'os se réorganiserait autour de celle-ci, comme le font les tissus gingivaux supra-alvéolaires selon les théories actuelles.

Peu après, on démontre histologiquement (Oppenheim⁴² et Sandstedt surtout) que le mouvement dentaire est causé par une résorption osseuse du côté de la pression et une néoformation osseuse du côté de la tension. A la fin des années cinquante et au début des années soixante, Reitan⁴⁹ a expliqué en détail les fondements de cette théorie et avancé des preuves histologiques: pour lui la résorption osseuse est liée indirectement à la pression qui s'exerce sur l'os par l'intermédiaire des changements qui s'opèrent au niveau du lit vasculaire. L'occlusion totale de l'afflux sanguin dans divers endroits provoque une nécrose localisée (hyalinisation) et la réponse cellulaire éloignée ("undermining resorption") est stimulée par la présence de cette zone à "nettoyer". Reitan n'explique cependant pas la réponse éloignée qui voit l'apposition osseuse à la surface buccale d'une crête alvéolaire alors que sa face dentaire se résorbe.

Très récemment Picton⁴⁶, Baumrind⁷ et Grimm³⁰ ont démontré et mesuré un mouvement de l'os alvéolaire consécutif à l'application d'une force sur la dent. Ils ne peuvent cependant expliquer en quoi ces mouvements osseux pourraient s'associer en eux-mêmes aux processus histologiques déjà décrits. Finalement Zengo et al.⁵⁹ ont proposé que les propriétés piézoélectriques de l'os pourraient être responsables de la réponse histologique aux forces orthodontiques. Leur théorie peut se schématiser simplement comme suit:



Lien entre la déformation mécanique et l'activité cellulaire?

L'importance des facteurs mécaniques dans la physiologie de l'os n'a plus à être démontrée. Qu'il nous suffise de penser, en plus du mouvement dentaire orthodontique, aux réparations des fractures, au remodelage interne de l'os, à l'ostéoporose d'immobilisation. Qu'on pense à la théorie de la matrice fonctionnelle de Melvin Moss⁴² qui rend la croissance quelque peu tributaire des influences mécaniques (environnement)!

En regard de ces facteurs mécaniques on a étudié beaucoup le comportement des cellules et des fibres à partir d'un stimulus quelconque, le plus souvent une force mécanique. Notre compréhension semble cependant diminuer lorsqu'il s'agit d'expliquer comment les éléments impliqués (cellules, fibres, enzymes) peuvent comprendre le message et savoir quoi faire et à quel moment. Est-ce que les cellules osseuses peuvent, elles, "sentir" la pression à l'intérieur d'un os déformé, que cet os soit un fémur ou une alvéole dentaire? Les auteurs semblent unanimes à répondre non, les cellules osseuses ne sont pas soumises directement aux pressions externes. En effet les principes physiques nous

enseignent qu'il faudrait une pression beaucoup trop forte sur l'os pour que les cellules emprisonnées dans les travées, ou disposées en surface, ressentent une pression quantitativement appréciable. Si l'on perce un trou à l'intérieur d'un métal et que l'on exerce une contrainte sur ce dernier, les vecteurs de force contournent la lacune et évidemment ce qu'elle pourrait contenir.

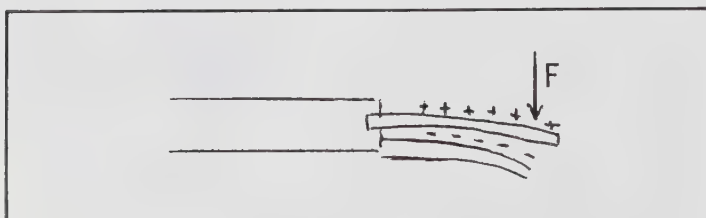
Il faut donc que cette pression leur soit transmise d'une façon indirecte par un decodeur, un "transducteur" pour transformer cette énergie en une forme plus compréhensible, ou mieux, plus facilement transportable du point d'application de la force à l'endroit où se passera la réaction. Cette transformation pourrait se faire en énergie électrique, et cette hypothèse ne peut en aucune façon contredire les principes physiques qui nous gouvernent.

Plusieurs propriétés des matériaux peuvent amener des potentiels de déformation. On s'intéressera à la piézoélectricité.

Définition:

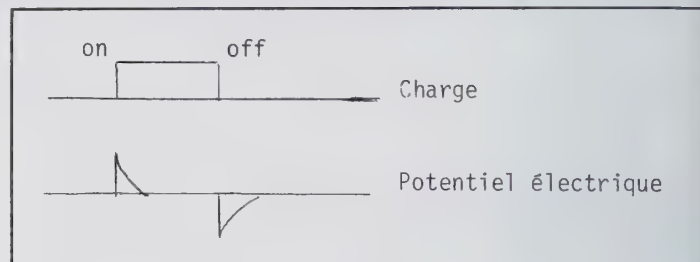
Classiquement la piézoélectricité est la polarisation électrique résultant d'une force quelconque appliquée sur un cristal qui n'a pas de centre de symétrie. De plus cet effet est réversible, c'est-à-dire que si l'on applique un champ électrique il y a déformation proportionnelle du cristal. Le premier effet, i.e. formation d'un potentiel sous l'effet d'une déformation est appelé "effet direct" alors que l'inverse est appelé "effet piézoélectrique indirect". Le potentiel généré est une fonction de la déformation et vice versa. Nous verrons que l'effet piézoélectrique a été démontré dans plusieurs substances autres que les cristaux, par exemple le bois, l'os, le cartilage, certains tissus mous comme la peau ou les parois intestinales et même dans les protéines et les acides nucléiques.

En 1921, E. W. Russel s'interroge sur les possibilités de production de piézoélectricité par les contractions musculaires⁵⁰. Ce n'est qu'avec les travaux de Fukada et Yasuda à partir de 1954 que la piézoélectricité a été démontrée dans la fibre de cellulose²³ (bois d'ébène), l'os entier sec²⁴ et le collagène (tendon)^{25, 26}. Ces travaux de Fukada, de Bassett et de Becker sont classiques et unanimes. Lorsqu'on applique une force perpendiculaire à l'axe principal d'un os monté en porte-à-faux, la déformation élastique produite engendre un potentiel électrique électro-négatif du côté concave et électro-positif du côté convexe.



Cette différence de potentiel est relative, tout comme le froid est l'absence de chaleur. Ainsi le côté positif l'est par rapport au côté négatif, ou plus négatif. Contrairement à ce qui se produit chez les cristaux inorganiques asymétriques, ce potentiel ne demeure qu'un instant et disparaît très

rapidement pour atteindre le zéro en l'espace de quelques secondes au plus. Deuxième caractéristique; la suppression de la force produit un potentiel de même amplitude mais de signe opposé. Troisièmement, si on renverse la pression, i.e. si on fait subir une rotation de 180° au spécimen, le signe de la polarité demeure inchangé.



Cette diminution caractéristique du potentiel serait due à la diffusion des charges (leakage). La rapidité d'application de la force, ainsi que son intensité, modèlent la réponse électrique. A cause de cette diffusion des charges le potentiel est proportionnel à la vitesse de déformation. La valeur du potentiel de déformation dépend aussi de l'angle entre la force appliquée et l'axe de l'os. Ce potentiel augmente de façon linéaire avec l'augmentation de la force jusqu'à la fracture du spécimen, et ce, même s'il y a des changements plastiques de la part du spécimen. Dans ce cas cependant le potentiel de polarité opposée lors du relâchement de la force pourra fort bien être d'amplitude inégale au premier voltage.

Origine:

L'origine de ces potentiels piézoélectriques dans les tissus organiques est encore controversée. Cependant, plusieurs faits sont acquis. On sait, d'après les travaux de Fukada, de Bassett, de Marino et de Becker, que:

- La piézoélectricité ne requiert pas la présence de cellules vivantes.
- Les réponses piézoélectriques des os de plusieurs espèces sont qualitativement semblables.
- La réponse persiste sans altération significative malgré une variété de traitements mécaniques, physiques et chimiques jusqu'à ce que l'échantillon approche la destruction.
- Plus le contenu en eau de l'os est important, moins la réponse piézoélectrique est importante.
- Plus l'os est mature, plus la constante piézoélectrique "d" est importante.
- La piézoélectricité n'est pas altérée par le temps qui s'écoule après la mort de l'individu (expérimentations faites sur des os trouvés au Pérou et probablement vieux de plus de 2000 ans).
- L'os affecté par une néoplasie présente en périphérie de la lésion la même activité piézoélectrique que l'os normal.
- Dans la lésion même la piézoélectricité est diminuée de beaucoup.
- Ces phénomènes sont indépendants du sexe.
- L'émail dentaire n'a pas d'activité piézoélectrique.

Cependant, il serait possible que, même si un cristal d'hydroxyapatite n'est pas piézoélectrique, l'agencement de plusieurs cristaux forme un tout ou un agencement non centro-symétrique et par conséquent piézoélectrique. Il se peut aussi, quoique fort peu probablement, que des cristaux présentant des anomalies (dislocations, translocations, etc) soient responsables de la production d'une légère réponse électrique. En effet, un matériau isolant qui contient des dislocations de surface peut se comporter comme s'il était entrelacé de bandes très fines d'un matériau conducteur. Shamos et Lavine⁵² s'opposent à cette théorie, prétendant que la différence d'énergie nécessaire pour pousser les électrons dans la bande conductrice ne pourrait être fournie à la température du corps. Dans l'étude des cristaux d'apatite de provenance biologique il est possible que les très légers potentiels observés soient engendrés par des restes de substances organiques.

Bassett² propose également qu les jonctions (jonctions p-n: "p" pour positif et "n" pour négatif) entre les fibres de collagène (élément organique) et les cristaux d'hydroxyapatite (élément inorganique) soient responsables de la production d'un effet piézoélectrique. Cependant, un os complètement déminéralisé, i.e. ne présentant plus de cristaux, donc plus de jonctions p-n, présente quand même un effet piézoélectrique. Bassett a aussi proposé qu'il y ait des différences de polarisation entre les ostéones d'âge différent lors de l'application de forces de cisaillement entre ces ostéones. Ainsi, l'ostéone plus âgé, donc plus "dur" devrait produire et emmagasiner plus de charges qu'un ostéone plus "mou". La région plus dure et plus sèche serait négative par rapport à la région plus molle et plus hydratée. Cette théorie de Bassett, apparentée à celle du contrôle par "feedback" négatif de Marino et Becker³⁷, est intéressante en ce sens qu'elle explique le remodelage interne de l'os et l'atrophie d'immobilisation.

L'hypothèse qui semble la plus acceptée reste cependant celle de Fukada qui impute la production du potentiel piézoélectrique à la distorsion des "cross-linking bonds" du collagène. Il propose aussi un glissement des fibres de collagène les unes contre les autres. Le collagène semble en effet le premier responsable de l'activité piézoélectrique dans les tissus biologiques, même si on a trouvé que d'autres protéines et la D.N.A. seraient également piézoélectriques.

Sources possibles de piézoélectricité:

Il serait facile de prétendre qu'il n'apparaît guère physiologique de charger un os perpendiculairement à son axe long, et de questionner l'apparition de potentiels piézoélectriques biologiquement actifs dans les actions de notre vie quotidienne. L'atrophie d'immobilisation et le remodelage osseux ne sont pas des preuves de l'existence de la piézoélectricité mais plutôt des preuves évidentes qu'un mécanisme de contrôle par rétroaction entre en jeu lors de ces phénomènes. Des potentiels de déformation peuvent cependant être générés à tout instant par une foule de tissus, sinon tous. Ce qu'on ne connaît pas encore c'est la signifi-

cation biologique de ces signaux. Les mouvements de la membrane cellulaire peuvent provoquer des potentiels de déformation, les déformations vasculaires, les contractions musculaires, les chocs avec l'environnement sont tous des générateurs possibles de potentiels piézoélectriques. Le poids du corps reposant sur les fémurs pour résister à la gravité produit une légère courbure chez ceux-ci, semblable à celle que l'on pourrait appliquer perpendiculairement à leur axe long. McElhaney⁴¹ a imité la posture naturelle et a chargé un fémur d'un poids de 50 livres parallèlement à son axe long, sur la tête condylienne, et enregistré des potentiels de déformation sur toute la surface de la diaphyse. Lorsqu'on étire un tendon, il y a production de forces de cisaillement perpendiculaires à son axe long. Or, anatomiquement parlant, les tendons résistent surtout à des forces de tension. Des forces de pression sur les vertèbres sont constamment en jeu lorsqu'on est debout et ont certainement pour effet de les modeler de façon à leur donner une plus grande résistance comme l'a supposé Frost¹⁸.

D'un point de vue dentaire, il y a déformation osseuse et donc probablement production de potentiels à chaque fois que l'on ouvre ou ferme la bouche, sous l'action des muscles et/ou par l'interférence des dents ou des aliments entre celles-ci. Certains ont mesuré l'augmentation de la largeur bigoniaque sous l'effet des forces de la mastication alors que d'autres ont pu déceler, dans le plan sagittal, une déformation au niveau de l'angle goniale. Au niveau de l'alvéole dentaire même, il a été mesuré qu'une force, même minime, exercée sur la dent produit une déformation mesurable de la paroi alvéolaire.

Effets de la piézoélectricité:

Faits connus:

On sait d'après les expériences que les phénomènes piézoélectriques peuvent influencer le comportement de l'os et même de plusieurs autres tissus biologiques à commencer par les divers types de cartilage. Bassett⁶ a stimulé la formation de régions d'ostéogénèse à l'intérieur du fémur chez le chien en introduisant deux électrodes, séparées de 13 mm., dans la cavité médullaire de l'os et en délivrant des courants de 10 à 100 μ amp. pendant trois semaines. Il y a production massive d'os à la cathode et peu de réponses à l'anode. Histologiquement on remarque que le nombre des ostéoblastes est augmenté dans la région d'ostéogénèse cathodique. On ne sait cependant pas si le courant électrique a stimulé une migration cellulaire vers la cathode, ou bien si ce stimulus électrique a poussé les cellules déjà présentes à se différencier ou à se multiplier. Les travaux de Becker⁸ chez les amphibiens ont montré qu'un courant direct peut affecter la régénération d'un membre préalablement amputé. Shamos et Lavine⁵⁴ ont doublé la vitesse de guérison de lésions expérimentales du fémur chez le lapin avec des courants de 2 à 4 μ amp. Ils ont également présenté un cas de pseudo-arthrose humaine chez lequel ils ont provoqué l'union d'une lésion depuis longtemps préexistante par le biais d'un courant de 3.9 μ amp. entre des électrodes implantées dans l'os cortical à 2 cm. de chaque côté de la lésion. Yasuda⁵⁸ a de son côté provoqué la formation d'un

cal osseux en soumettant des os longs à des courants de diverses intensités. Avec des courants de 1 à 100 $\mu\text{amp.}$, ils ont provoqué la formation d'un cal osseux alors qu'un courant variant de 100 $\mu\text{amp.}$ à 1 $\mu\text{amp.}$ conduisant à la formation d'un cal cartilagineux, et que finalement des courants de plus de 1 $\mu\text{amp.}$ produisaient une destruction osseuse. Plusieurs autres expériences ont démontré que l'activité électrique influence l'activité biologique dans différents tissus. Cependant, il semble difficile d'évaluer comment et à quel niveau cette influence se fait sentir.

Effet direct sur les fibres:

Les principales hypothèses proposent que la piézoélectricité ait soit un effet direct sur les fibres de collagène ou les cellules osseuses, soit un effet indirect sur ces mêmes organites. Bassett a proposé que les potentiels de déformation aient un effet direct sur l'orientation et l'aggrégation des fibres de collagène. Ses travaux ont démontré que les fibres de collagène provenant de queues de rats et solubles dans l'acide peuvent migrer vers la cathode avec des courants aussi faibles que 1 $\mu\text{amp.}$ Les fibres se retrouvent alors orientées longitudinalement, parallèlement les unes aux autres, et à 90° du champ électrique. On sait de plus que les molécules de collagène sont polaires, portant une charge nette positive, et donc il ne serait pas surprenant de les voir migrer électrophorétiquement.

Effet direct sur les cellules:

Les potentiels piézoélectriques peuvent avoir un effet direct au niveau des cellules. La théorie de Marino et Becker³⁷ à ce sujet semble intéressante. Leur raisonnement est le suivant: s'il y avait un observateur au niveau de chaque cellule de l'os, chacun de ces observateurs enregistrerait, lors de la déformation osseuse, une distribution de charges différente. Aussi la vitesse de la neutralisation de ces charges sera différente pour chacun d'eux, parce que cette neutralisation dépend d'une foule de facteurs locaux comme la viscosité de milieu, la concentration et la mobilité des ions diffusibles, etc. Ainsi, chaque observateur verra la création d'un potentiel et sa neutralisation. Ces processus pourraient représenter un signal de contrôle biologique. Ils ont en effet (ou peuvent avoir) deux des propriétés nécessaires: soit premièrement la variabilité à cause de la localisation cellulaire différente d'une cellule à l'autre, et une possible uni-directionnalité. Cette uni-directionnalité pourrait être approchée si par exemple la vitesse d'enlèvement de la charge d'égale pas sa vitesse d'application, si la force est incomplètement enlevée ou si des phénomènes visco-élastiques ou plastiques ont lieu pendant la déformation. Young a postulé que les trois types majeurs de cellules osseuses sont interchangeable, le changement de spécialisation ayant lieu à cause de changements dans le micro-environnement. C'est ainsi que les phénomènes piézo-électriques pourraient être responsables du remaniement interne du tissu osseux. Ainsi, un os normal, dans des conditions de charges normales, produirait des potentiels responsables de son remaniement. Un os anormal (fracturé selon un angle par exemple) dans des conditions de charges

normales produirait des potentiels altérés qui augmenteraient la déposition osseuse dans certaines régions et la diminueraient dans d'autres (modelage). Enfin, l'os normal sans aucune charge ne produirait pas de potentiel et s'atrophie. Il s'agit en fait d'une hypothèse appuyant un système de contrôle par rétro-action (feedback) négative qui semble de plus en plus admis au niveau théorique mais dont les bases physiologiques restent encore incertaines. Une force externe sur l'os déforme celui-ci qui répond, en se remodelant, par un changement de forme qui tend à diminuer la déformation causée par une éventuelle application subséquente de la même force. A la limite la réponse serait telle qu'une force normale ou usuelle sur l'os ne produirait presque plus de déformation, donc plus de potentiel, et l'os tendrait à s'atrophier. Donc ce système de contrôle par feedback aiderait à maintenir un équilibre constant à l'intérieur de l'os. En extension à cette théorie, on a avancé que des facteurs autres que l'effet piézoélectrique pourraient être responsables d'une partie des stimuli et amener par exemple le maintien d'une "quantité minimale" d'os, même si celui-ci est dans un état d'inactivité complète; on pense entre autres aux "Streaming potentiels" engendrés par le courant sanguin à l'intérieur et à travers les vaisseaux.

On a trouvé également que les protéines et les acides nucléiques sont piézoélectriques. Il se pourrait également, quoique ceci ne soit qu'une hypothèse, que la piézoélectricité ait une influence directe au niveau de l'activité enzymatique. Aucune recherche ne semble cependant avoir été faite en ce sens.

Effet indirect:

L'effet du potentiel piézoélectrique pourrait s'exprimer d'une façon indirecte, soit par un changement de pH du milieu impliqué, soit par des changements de diverses concentrations ioniques comme Jahn³³ le propose. On sait que l'alignement des fibres de collagène est sensible aux changements de pH et à la concentration des populations ioniques. On sait aussi qu'une migration ionique est une réponse possible à l'application d'un champ électrique. Ives et Janz³² ont démontré que les potentiels piézoélectriques peuvent affecter le pH. On sait aussi par expérience que les conditions alcalines favorisent l'ostéogénèse alors que les conditions acides favorisent l'ostéoclasie. Il est donc fort possible, en modifiant l'environnement, (et la piézoélectricité le peut) de s'attendre à une adaptation ou à une réponse cellulaire, fibrillaire, enzymatique ou autre.

Au niveau cartilagineux on a supposé que la polarité piézoélectrique du cartilage articulaire pendant la charge pourrait hypothétiquement faciliter la lubrification de l'articulation. Cette polarité, positive du côté articulaire et négative du côté osseux, peut s'avérer significative quand on sait que l'adhérence du hyaluronate de sodium semble augmentée par une surface chargée positivement.

Piézoélectricité et mouvement dentaire:

A) Piézoélectricité des tissus dentaires:

Braden⁹ a trouvé, comme on pouvait s'y attendre d'un point de vue théorique, que l'hydroxyapatite

($\text{Ca}_{10}(\text{PO})_6(\text{OH})_2$) n'a pas de propriété piézoélectrique. L'émail dentaire (97% de cristaux d'hydroxyapatite) n'a pas non plus d'activité piézoélectrique appréciable. La résistivité de l'émail étant plus grande que celle de la dentine, ce manque de réponse ne peut être attribué à une diffusion trop rapide des charges. La dentine démontre une activité piézoélectrique, mais cependant moins importante que celle de l'os. On peut probablement expliquer ces différences par la fait que l'émail ne contient que très peu de collagène. En fait, le groupe d'Ogolnik⁴³ a trouvé des effets piézoélectriques dans la dentine et dans la pulpe. Lorsqu'ils répètent leurs expériences après avoir extrait les éléments organiques de la dent, l'effet piézoélectrique disparaît presque complètement, imputant l'effet à cette trame organique. Ils ont aussi trouvé des charges plus importantes dans les jonctions énamo-dentinaire et dentino-pulpaire, et expliquent que ces régions sont plus riches en éléments organiques. Athenstaedt¹ a trouvé pour sa part un effet piézoélectrique dans le ciment. Selon son étude, la dentine et le ciment ont des comportements pyro et piézoélectriques selon deux axes précis: premièrement dans le sens de l'axe longitudinal physiologique de la dent, i.e. parallèlement à l'orientation principale des fibrilles de collagène et deuxièmement, dans toutes les directions radiales en partant de la cavité pulpaire. L'orientation des axes pyroélectriques est la même pour toutes les dents des maxillaires supérieur et inférieur et dépend de la direction de développement morphogénétique de la dent. En compression longitudinale, une dent complète a une charge positive près de la surface occlusale et une charge négative à l'apex. N'importe lequel disque coupé transversalement se comporte comme la dent complète. En compression latérale, la positivité est en périphérie.

B) Potentiels de l'os alvéolaire:

Cochran et Bassett¹⁴ ont fait des coupes de mandibule de 1 cm. d'épaisseur et ont appliqué des forces allant jusqu'à 10 kg. pendant 10 msec. sur les dents. La force est alors transmise à l'os via la membrane périodentaire. Le voltage enregistré varie de 0,5 à 5 mV. et suit les caractéristiques piézoélectriques de l'os en général: l'aspect concave de l'os est invariablement électro-négatif alors que le côté convexe est électro-positif, le voltage est proportionnel à la charge, la suppression de la charge produit une vague de même intensité mais de signe opposé. Dans de gros segments de mandibule (qui incluent plusieurs dents), on n'a pas pu enregistrer de voltage. Ils avancent deux raisons possibles: premièrement la grande rigidité de la mandibule en regard des charges appliquées, et deuxièmement la diffusion des charges dans une masse osseuse plus grande. La surface en coupe de la dent est toujours négative par rapport à l'os adjacent. Ces forces de 10 kg. sont près des forces physiologiques causées par la mastication, la déglutition, etc.

Dans une étude récente, Zengo, Pawluk et Bassett⁵⁹ ont démontré que pour des mouvement de bascule dentaire il y a développement d'un potentiel au niveau de l'os alvéolaire tout autour de la dent. Ce potentiel est proportionnel au déplacement, donc à la force, et décroît comme on pro-

gresse vers l'apex (d'environ 70). Dans la région du centre de rotation de la dent, la polarité change. Il y a des changements de polarité sur la dentine également; ce changement de polarité est du même signe que celui qui survient à la surface de la corticale correspondante. La polarité sur la surface interne de l'os alvéolaire est l'inverse de la polarité développée sur la surface externe. Pour les mouvements de bascule l'électro-négativité correspond aux régions connues d'ostéogénèse, alors que les régions d'électro-positivité et d'électro-neutralité correspondent aux régions connues d'ostéoclasie. Dans les mouvements d'intrusion, il y a génération de potentiels électro-positifs sur la paroi interne de l'alvéole et électro-négatifs sur la surface dentinaire (ou cémentaire) et sur les parois alvéolaires externes. Lorsque les auteurs remplacent une dent dans l'alvéole par sa réplique exacte en acrylique, il n'y a aucun changement dans le patron de potentiels produits sauf dans les régions de tension. Ce manque au niveau de la tension, dû à l'absence de fibres, devrait affecter les forces de pression mais les auteurs ne l'indiquent pas. Cette expérience exclue la piézoélectricité produite par la déformation de la dent elle-même comme étant la principale responsable de la réponse osseuse. Contrairement au groupe de Braden, les auteurs trouvent des potentiels de déformation plus grands pour la dentine que pour l'os. Dans cette expérience les forces ont varié de 75 à 3000 gr., ce qui demeure dans l'ordre des forces orthodontiques et physiologiques. Les auteurs suggèrent même que moins de force serait nécessaire pour faire naître une réponse similaire "in vivo". Lorsqu'on enregistre le potentiel à la surface coronaire de la dent, celui-ci est très important. Ogolnik⁴³ a avancé pour explication que les jonctions énamo-dentinaire et énamo-cémentaire sont particulièrement riches en matière organique. Il se peut aussi que la différence entre les propriétés mécaniques des deux tissus (émail et dentine) puisse être responsable d'une haute contrainte de cisaillement (shear stress) à la jonction énamo-dentinaire.

Les matériaux dentinaires (dentine, ciment, etc.) sont piézoélectriques, comme une bonne partie des tissus vivants; mais il ne semble pas falloir chercher là la cause du mouvement de la dent à travers l'os. En effet, ce mouvement est dû à un remodelage de l'os et si l'effet piézoélectrique est responsable de ce remodelage, il faut le chercher à travers la charge qui lui est imposée par la dent via la membrane périodentaire.

C) Théorie de Frost:

La théorie de Frost¹⁸ est intéressante à cet égard; il tente en effet de relier la réaction osseuse à la déformation de l'os plutôt que de la relier simplement à la pression et à la tension. Cette théorie de pression-résorption et tension-apposition, basée principalement sur la modification locale de la nutrition cellulaire par voie hémodynamique, ne réussit pas à expliquer à elle seule tous les phénomènes qui se produisent dans l'os en réponse à divers stimuli. Par exemple, lorsqu'un fémur est fracturé selon un certain angle avec son axe long, il y a formation osseuse du côté compression. Par contre, dans les forces d'orthodontie clas-

siques, il y a résorption du côté de la pression. Les forces compressives qui s'exercent sur le talon ne conduisent ni à la résorption ni à l'apposition. Les forces masticatoires et de déglutition, qui sont des forces intrusives intermittentes, ne semblent pas produire d'intrusion dentaire systématique mais plutôt il y a exfoliation continue de la dent avec l'âge. D'après Frost, une force externe qui augmente la concavité de l'os inhibe l'activité ostéoclastique et de l'os est déposé, tandis qu'une force qui diminue la concavité (ou augmente la convexité) inhibe l'activité ostéoblastique et l'os est résorbé. Dans les régions où il y a une force purement compressive mais pas de changement dans la courbure de la surface, il n'y aurait induction ni de résorption ni d'apposition. C'est donc un système de contrôle par "feedback". Frost avance aussi qu'il faudrait un minimum de déformation pour influencer les cellules, donc qu'il y aurait un seuil quelconque. Frost admet également l'existence et la signification biologique d'une activité électrique en réponse à une déformation mécanique. Pour lui cependant, pour qu'un signal soit valide biologiquement, il lui faut être uni-directionnel. Bassett a, quant à lui, expliqué comment un signal biphasique comme le potentiel piézo-électrique peut être ou devenir uni-directionnel.

D) Limites de ces théories:

Ces diverses avenues sont intéressantes quant à l'étude du contrôle biologique du mouvement dentaire. Les recherches sont intéressantes, rigoureuses et donnent des explications plausibles. Beaucoup de points d'interrogations subsistent cependant dans nos esprits. On se concentre en effet sur l'étude des mouvements de bascule, plus simples et plus faciles à produire, même si Frost et Zengo ont abordé la question de l'intrusion, alors que cliniquement plusieurs autres types de mouvement sont utilisés tous les jours en orthodontie et s'avèrent efficaces. Qu'il nous suffise de mentionner la translation pure ou mieux encore le mouvement de racine où le centre de rotation est situé au niveau du boîtier! Mais même pour le mouvement de bascule la théorie de Frost faillit à l'expliquer complètement. Rappelons-nous que, selon lui, dans un mouvement de bascule, la corticale alvéolaire est déformée en ce sens que le côté buccal devient concave et le côté dentaire convexe, conduisant à la résorption du côté dentaire et apposition du côté buccal. Mais supposons deux mouvements de bascule opposés et adjacents, comme par exemple la fermeture d'un diastème par mouvement de bascule, qu'elle sera alors la déformation du septum osseux inter-dentaire? Peu probablement celle proposée par Frost et pourtant des diastèmes se ferment tous les jours de cette façon. Si nous insistons sur cette théorie de la déformation de Frost c'est qu'elle est à la base même de l'acceptation de l'effet piézo-électrique comme pouvant être responsable, en partie du moins, du mouvement orthodontique. Nous avons vu en effet que les polarisations piézoélectriques ne se font pas au hasard dans toutes les directions mais bien qu'elles obéissent à la mécanique de la déformation. Or, en orthodontie les forces sont appliquées de mille et une façons et la réponse est toujours la même: résorption du côté de la

pression et apposition du côté de la tension. Il est cependant possible et fort probable que nous ne connaissions pas encore les patrons complets de déformation de l'os alvéolaire sous l'effet des forces orthodontiques. Si l'on s'attarde à un niveau de déformation beaucoup plus circonscrit, i.e. au niveau des trabécules osseuses mêmes, le sens de la déformation nous est encore plus inconnu et il est concevable de rendre l'effet piézoélectrique responsable d'une partie de la réponse biologique à la pression. Nous venons de poser quelques questions en ce sens et la littérature n'a pas encore, à notre connaissance, apporté de réponse véritable.

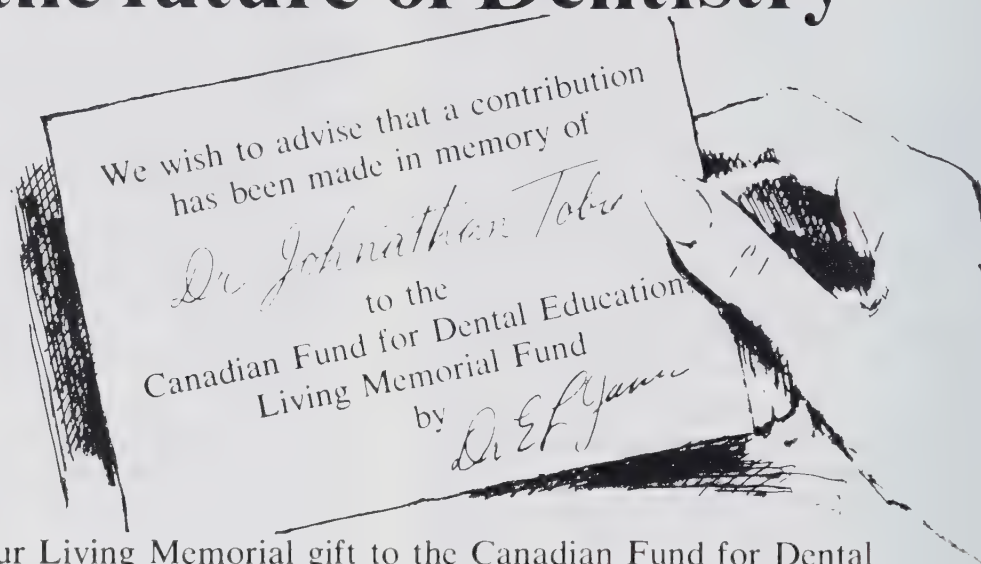
D'un autre point de vue, il est justifiable de soulever une autre question quant à la possibilité pour la piézoélectricité d'induire une réponse cellulaire et le patron d'apposition-résorption en réponse à l'application des forces orthodontiques. En effet, le mouvement orthodontique est une réponse à une force constante ou presque, de fait une force lentement décroissante qu'on réanime à tous les mois environ par réactivation d'un ressort ou par l'insertion de nouveaux élastiques etc. Cette procédure a certainement pour effet d'amener l'uni-directionnalité des signaux nécessaire, car au rythme où la force décroît il est impensable d'avoir un pic de signe opposé lors de l'enlèvement de la force. Cependant, on peut douter qu'une impulsion par mois puisse produire un signal biologiquement valable. Parmi les expériences que nous avons vues, toutes se sont appliquées, pour produire une réponse osseuse, à induire des signaux de beaucoup plus ample importance, i.e. des impulsions continues pendant plus d'une semaine. Si le signal piézoélectrique a pour effet de provoquer la différenciation cellulaire, il serait possible que son effet perdure quelques temps après sa manifestation, jusqu'à ce qu'un autre signal vienne renforcer le premier. Mais ce n'est certainement pas ce qui se produit, du moins à la manière de ce que nous venons d'étudier.

Conclusion:

En fait, nous simplifions volontairement les choses en vue de dégager les barrières de connaissances qui n'ont pas encore été surmontées à ce jour. Une expérimentation scientifique et rigoureuse nous a apporté des connaissances certaines: premièrement, les potentiels électriques ont un effet sur le comportement des tissus vivants, et deuxièmement les forces orthodontiques peuvent générer des potentiels électriques. Il serait tout aussi futile de nier la signification biologique de la piézoélectricité en orthodontie que de l'impliquer comme la seule responsable de toute l'activité cellulaire que sous-entend le mouvement dentaire. Nous n'avons étudié qu'un point, la piézoélectricité, mais nous sommes conscients que plusieurs autres facteurs non étudiés ici sont de grande importance; qu'il nous suffise de mentionner les "streaming potentials" pour démontrer que nous n'avons même pas couvert tous les phénomènes bio-électriques, ou encore la nutrition cellulaire pour dire que ce point demeure encore un des plus importants dans l'explication des mouvements dentaires.

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BRITISH COLUMBIA — Prince George. Dentist with 12 years in general practice is seeking to associate, to do locums or to purchase a practice in the Victoria and district area. Availability, July 1, 1979. Please reply to: 5663 Moriarty Drive, Prince George, B.C. V2N 3P7.

BRITISH COLUMBIA — Vancouver. Recent McGill graduate seeks associateship, possibly leading to partnership, in a preventive oriented modern practice in Vancouver or within 60 mile radius. Presently completing dental residency in Montreal hospital with emphasis in restorative dentistry, oral surgery, diagnosis, periodontics, endodontics and medical management. Available July/August, 1979. Reply to CDA Box Number 1868.

MANITOBA — Winnipeg. Dentist seeks part-time association, two or three days per week. Per diem, percentage, or any other arrangement. Reply to CDA Box Number 1878.

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BRITISH COLUMBIA — Courtenay. Full time associate required with option to buy in. Contact: Dr. Derek Duvall, 556 Fifth Street, Courtenay, B.C. V9N 1K3. Phone: (604) 338-5981 (office) or (604) 339-4272 (residence).

ALBERTA — Banff. Associate required, or practice for lease, in Banff, heart of the Canadian Rockies. Apply: Athabasca Dental Association, Box 1356, Banff, Alta. Telephone: (403) 762-4291.

ALBERTA — Calgary. Associate required to take over two operatories, fully equipped. No capital needed. Terms negotiable. High income area close to Calgary. Reply to CDA Box Number 1871.

ALBERTA — Medicine Hat. Associate required for a well established, busy, modern, preventive oriented practice; with two other dentists. All aspects of general dentistry, with modern equipment. Eight operatories, Panelipse, automatic X-ray developer. Hospital privileges available. Opportunity for full partnership if desired. In fast-growing city of 35,000 people, near Cypress Hills Provincial Park. Contact: Drs. Habijanac or Gregory at 304 — Royal Bank Building, Medicine Hat, Alta. Telephone: (403) 527-5526.

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BRITISH COLUMBIA — Port Coquitlam. For sale or lease: Busy family practice with three operatories. High gross. Good for one ambitious dentist or two associates. Owner willing to make special arrangements for older or experienced dentist. Contact: Dr. J. W. James, 2381 Bury Street, Apt. 113, Port Coquitlam, B.C. V3C 1Z9. Telephone: (604) 942-7694 (home).

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ONTARIO — Toronto. For Sale: Downtown dental practice. Contact: Dr. Robert Delmas, Suite 303, 6 Adelaide Street, Toronto, Ont. Phone: (416) 366-4475 or 859-0589.

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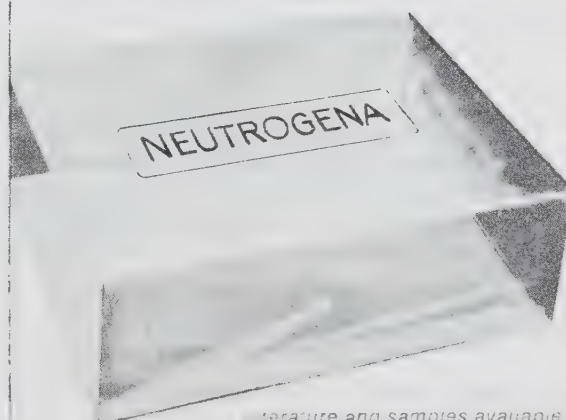
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Quebec, P.Q., 9-12 sept. 1979



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Québec, P.Q., 9-12 sept. 1979



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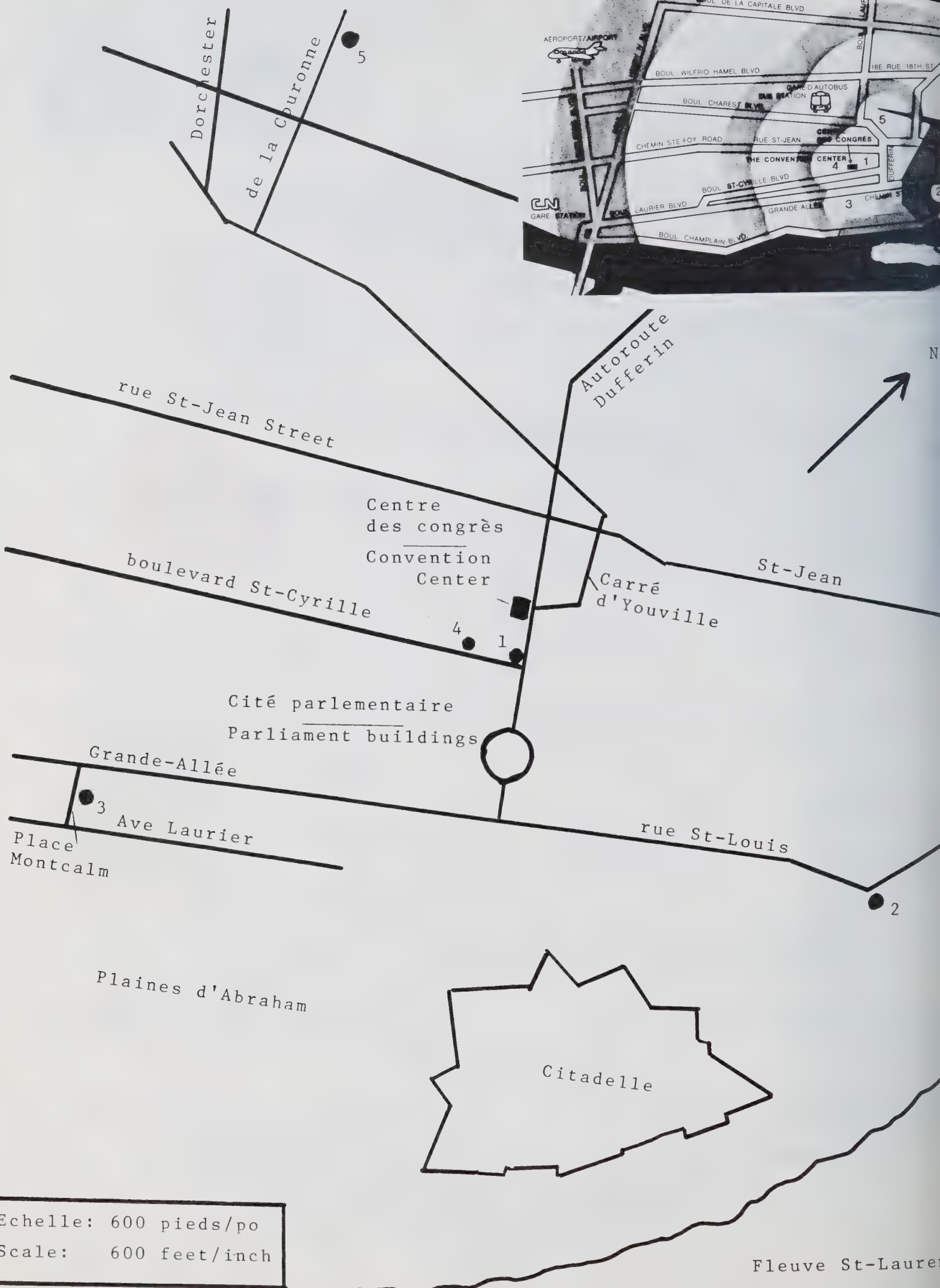
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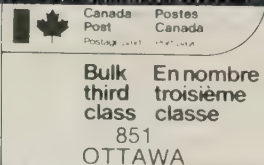
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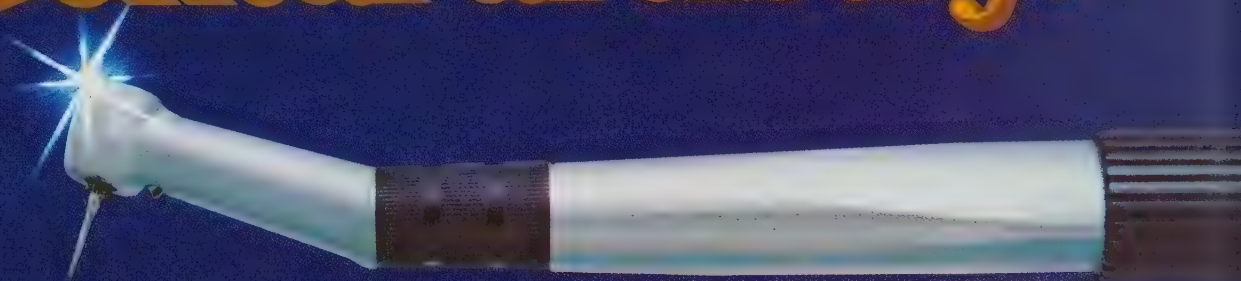
*Beiswanger, B.B., et al.: J. Dent. Child. 45:137, 1978



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May, 1979

Canadian Dental Association

JOURNAL

de l'Association Dentaire Canadienne

Mai, 1979

Vol. 45, no 5

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This month's cover is an artist's rendering of the winning design in the annual CDA Dental Health Month Poster Contest. The original water painting is by five-year old Jennifer Hau of Vancouver. See page 215.

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*The ADA Journal,
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The American Dental Association considers dental implants as experimental procedures. The July, 1978 issue of JADA reported that the Bureau of Medical Devices' classification list of dental materials and devices by the Food and Drug Administration Commission will allow the dental profession and manufacturers approximately 30 months in which to prove safety and effectiveness of endosseous implants. If adequate information establishing the safety and effectiveness of these devices is not presented within this time, the federal government can initiate proceedings to halt their production and sale.

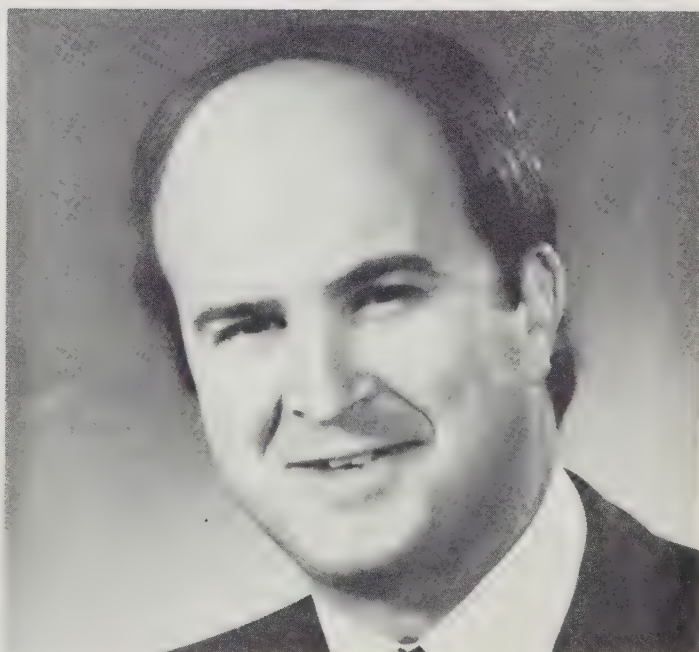
Since 1972, ADA Councils on Dental Research and Dental Materials and Devices have published position statements on endosseous implants (JADA, June 1972, February 1974 and March 1975). The Councils have considered these devices to be in the new technique phase and have recommended that all alternative treatment modes be considered and discussed with the patient before selecting the use of an implant. If an implant is then selected, for the protection of both patient and dentist, the patient should be advised of the possible limitations and that the degree of success of an implant is not known at this time.

The article in this issue (Alloplastic Implants in Prosthodontics, page 227) reviews the use of alloplastic implants in prosthodontics and attempts to analyze the topic in the context of sound research as this has been intelligently interpreted. The technique, as

practised on this continent, does not survive scrutiny. Dentists will readily understand why Prosthodontic Departments in Canadian dental schools have limited their implantology teaching to a mere presentation of scientific facts, coupled with a strong reluctance to prescribe the technique clinically.

While the review reflects a dissatisfaction with the bio-mechanical implications of the technique as applied to date, it is not meant to indict dental implantology as a therapeutic concept. Several health disciplines are committed to a constant search for better tissue and organ replacements, and clinical dentistry is no exception. But, a conscientious and tenacious commitment to research in the field of tooth and supporting alveolar bone replacement demands scientific methodology which has been lacking so far. Recent Swedish publications on research in the field of osseointegrated dental implants arouse optimism for this clinical technique. Prosthodontists and dentists all over the world will follow with great interest the attempts of several dental schools to replicate the longitudinal successes claimed by our Swedish colleagues.

Dr. G.A. Zarb



Dr. George Zarb is professor and chairman, Department of Prosthodontics, Faculty of Dentistry, University of Toronto.

«Plusieurs disciplines médicales cherchent sans arrêt à perfectionner le domaine du remplacement des tissue et des organes, et la dentisterie clinique n'y fait pas exception.»

L'ADA considère l'implantologie dentaire comme un procédé expérimental

Le remplacement efficace de dents naturelles manquantes au moyen de prothèses implantées constituerait certes un progrès important dans les traitements dentaires. Des milliers de patients edentés depuis de nombreuses années et qui présentent une réduction marquée des crêtes résiduelles constituent un problème presque insurmontable vue leur incapacité de fonctionner avec des dentiers conventionnels. Depuis quelques années, un certain nombre de dentistes aussi bien intentionnés qu'audacieux ont voulu régler leurs cas-problèmes en prescrivant des implants dentaires. Malheureusement, aucune combinaison idéale de matériel, dessin et technique n'a pu être mise au point et uniformisée, de sorte que de nombreux patients ont souffert inutilement de cette expérimentation humaine un peu prématurée.

L'Association Dentaire Américaine considère l'implantologie dentaire comme un procédé expérimental. L'édition de juillet 1978 du Journal de l'ADA publie la liste des produits et appareils dentaires reconnus par le "Bureau of Medical Devices" et rapporte que le "Food and Drug Administration" imposera à la profession et aux manufacturiers un délai de trente mois pour démontrer la sûreté et l'efficacité des implants dentaires endo-osseaux, à défaut de quoi le gouvernement fédéral pourra prendre les mesures nécessaires pour interdire leur production et leur vente.

Depuis 1972, deux Conseils de l'ADA, soient le Conseil sur la Recherche Dentaire et le Conseil sur les Matériaux et Appareils se sont prononcés sur les implants dentaires endo-osseux (JADA, Juin 1972, Février 1974 et Mars 1975). Tous deux considèrent l'implantologie comme une technique encore au stade de l'expérimentation et recommandent que tous les traitements possibles soient considérés et présentés au patient avant d'envisager l'implantation. Si on doit y recourir en dernier recours, il faudrait,

pour la protection du dentiste et du patient, que ce dernier soit prévenu des limitations du traitement et comprenne bien que son degré de succès demeure encore un facteur très aléatoire.

La présente édition du Journal de l'ADC publie en page 227 sous le titre "Alloplastic Implants in Prosthodontics" une analyse de l'utilisation des implants en alliages plastiques à la lumière des plus récentes recherches et de l'interprétation rationnelle des résultats. La technique, telle qu'appliquée sur ce continent, ne résiste pas à un examen minutieux. Chacun comprendra facilement pourquoi les départements de prosthodontie des écoles canadiennes de médecine dentaire limitent l'enseignement de l'implantologie à une simple présentation des connaissances acquises et demeurent très réticents à passer à l'application clinique.

Bien que l'article en question reflète peu d'enthousiasme pour l'implantologie telle que nous la connaissons, on ne cherche pas à la condamner sans recours. Plusieurs disciplines médicales cherchent sans arrêt à perfectionner le domaine du remplacement des tissus et des organes, et la dentisterie clinique n'y fait pas exception. Toutefois, un programme de recherche qui voudra se consacrer sérieusement au remplacement des dents et de l'os alvéolaire devra s'imposer une méthodologie scientifique rigoureuse, ce qui n'existe pas présentement. De récentes publications suédoises semblent optimistes après des essais avec des implants intégrés à l'os. Les dentistes et prosthodontistes du monde entier suivront sans doute avec beaucoup d'intérêt les tentatives de plusieurs écoles de médecine dentaire pour partager les succès obtenus par nos collègues suédois.

Dr G.A. Zarb,
professeur,
l'Université de Toronto

Dentists must be consulted

CDA president questions government on legal status of auxiliary program

The Honorable Monique Bégin,
Minister, Health and Welfare Canada,
Confederation Building,
Ottawa, Ontario.
K1A 0A6

Dear Madame Minister:

I write with much concern on behalf of the Canadian Dental Association to question the right of the federal government to interfere with the delivery of dental health care services to specified individuals.

Each province has a dental licensing body which has the legislative responsibility to regulate standards of practice, the qualification of personnel and the modes of delivery.

The Canadian Dental Association feels the federal government has critically infringed on the jurisdiction of the provincial licensing bodies through the introduction of an auxiliary program to serve Inuits and registered Indians on Crown Lands.

The concern of the CDA is that the federal government would appear to be planning to break the law by using these types of auxiliaries throughout Canada.

The CDA policy is that all irreversible therapeutic dental acts or services must be rendered by a licensed dentist. Within this framework, the acts in which the dentist is assisted by auxiliary personnel must remain under the responsibility and immediate supervision of the treating dentist.

The public is best served and protected through provincial government acts which are administered for the provincial government by the provincial licensing boards.

We refer you specifically to the Fort Smith School of Dental Therapy in the Northwest Territories. These ther-

apists are now operating in Nova Scotia, Manitoba, Alberta and British Columbia, and are reported to be moving into Newfoundland and Ontario, performing dental operations and procedures without supervision, contrary to the Provincial Dental Act of each province.

As the dental profession in Canada has never been consulted in this area, the CDA would very much like to dis-

cuss this whole issue with you and your ministry in order to determine and establish an adequate service for all the peoples of Canada.

I am looking forward to your favourable response in this direction.

Yours sincerely,

R.L. Moran, D.D.S.,

F.R.C.D. (C)

president,

Canadian Dental Association

"Difficult to accept Dr. Beagrie's conclusion"

Researcher's work doubted

It was most encouraging to note from the last article in your February issue that a dean of a Canadian Dental School can still find time to be involved in serious dental research. There were deans who certainly made major contributions to dental research in the past and if there are, at the present time, other Canadian deans pursuing significant dental research, their papers must appear in the more scholarly journals.

As one of those dentists weaned on the theory that orthophosphoric acid was the primary cause of the pulpitis which often follows the placement of silicate restorations, it is difficult to accept Dr. Beagrie's conclusion without feeling a bit of a twinge. That is to say, had we, in the "silicate days" prepared our cavities under aseptic conditions and after their toilet, had these cavities been absolutely sterile, we would have had nothing to worry about; we could also have discarded all those disgusting varnishes.

To this lay dentist, vis-à-vis the dental researcher, it would seem that

the application of a modified Koch's Postulate might provide the final coup-de-grace to all the ancient theorizing. More specifically, one could infect sterile cavities with the bacteria growing in the silicate bubbles. This material would be sealed in the cavity with non-acid, non-bacteriocidal, non-pressure stopping.

As a control, or rather in parallel, free orthophosphoric acid at a pH similar to silicate cement could be sealed in another sterile cavity. Since transient pulpitis, as well as final necrosis, is a significant side-effect, a subjective response would be most desirable. This could only be accomplished in human studies and the "volunteers" could be observed very closely to reverse an untoward result as quickly as possible.

One can readily appreciate the many difficulties associated with such an experiment, however, the results might put the matter to rest once and for all.

Charles Oler D.D.S.

Halifax, Nova Scotia

«L'ADC n'a jamais été consultée»

Le gouvernement fédéral se prépare à violer la loi - Moran, président

L'honorable Monique Bégin
Ministre
Santé et Bien-être Canada
Édifice de la Confédération
Ottawa, Ontario
K1A 0A6

Madame le ministre,

C'est avec beaucoup de préoccupation que je vous écris, au nom de l'Association Dentaire Canadienne, pour mettre en question le droit du gouvernement fédéral d'intervenir dans la distribution de services de soins dentaires à certains groupes.

Chaque province est dotée d'un organisme autorisé, en vertu du pouvoir législatif provincial, à instituer la réglementation nécessaire quant aux normes de pratique professionnelle, aux exigences de formation du personnel et aux modes de distribution des services professionnels dans le domaine dentaire.

L'Association Dentaire Canadienne estime que le gouvernement fédéral a gravement empiété sur la juridiction de ces organismes provinciaux en instituant un programme auxiliaire à l'intention des Inuits et des Indiens inscrits vivant sur des terres de la Couronne.

L'ADC s'inquiète de voir le gouvernement fédéral se préparer, de toute apparence, à violer la loi en recourant à ce genre de programmes auxiliaires un peu partout au pays.

La politique de l'ADC est la suivante: toute intervention ou tout service dentaire thérapeutique de nature irréversible doit être exécuté par un dentiste breveté. En vertu de cette politique, les interventions au cours desquelles le dentiste est aidé par un personnel auxiliaire doivent se faire

sous la responsabilité et la surveillance immédiate du dentiste traitant.

Il est dans les meilleurs intérêts du public que les organismes provinciaux de brevets conservent l'administration intégrale des lois provinciales dans les domaines prévus par la constitution.

Nous tenons à porter à votre attention le cas de l'école de thérapie dentaire de Fort Smith, dans les Territoires du Nord-Ouest. Ces thérapeutes exercent maintenant leur occupation en Nouvelle-Écosse, au Manitoba, en Alberta et en Colombie-Britannique, et on nous apprend qu'ils se préparent à s'établir à Terre-Neuve et en Ontario. Ils y font des interventions den-

taires sans surveillance, contrevenant ainsi à la loi dans chacune de ces provinces.

La profession dentaire n'a jamais été consultée à cet égard. L'ADC est donc des plus désireuses de débattre cette question avec vous et vos fonctionnaires, afin de déterminer et d'établir un service adéquat pour toute la population canadienne.

Dans l'attente d'une réponse favorable de votre part, je vous prie d'agréer, Madame le ministre, l'assurance de mes sentiments respectueux.

Le président de l'Association
Dentaire Canadienne
R.L. Moran, D.D.S., F.R.C.D. (C)

Association must not be pressured:

Reverse discrimination possible if CDA brief demands considered

Editor's note: *A copy of the following letter to Dr. Moran was received by the Journal.*

Dear Dr. Moran:

Re-Bill C-37

A copy of the brief submitted to the Standing Committee on Banking, Trade and Commerce was received 12 March 1979.

May I express my objections to the substance of this brief.

The CDA, as a health profession, should not get embroiled with other professional groups who favor incorporation as small businesses — mainly for reasons pertaining to sizeable income tax cuts, preferred interest rates, lower equity demands, etc.

If the CDA believes it is important that its members be able to incorporate as small businesses it should put the issue before its members, rather than being pressured by other groups.

With the remote possibility the government will rescind Bill C-37 further complications would arise. Reverse discrimination would occur, where members unable or unwilling to incorporate would be forced to pay up to 50 per cent more government tax.

This could only be negated by rewriting all provincial Dental Acts, incorporating the dental profession as a small business, rather than a profession.

A.C. Ahrens, DDS, MSD
Medicine Hat,
Alberta



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...nt leaves the office. Recommending Colgate* with MFP*
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Colgate's fluoride is an especially effective in-home cavity
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...phosphate (MFP), reacts with the tooth's surface layer
...atite (calcium hydroxyphosphate) to form fluoroapatite
...cium fluorophosphate).
...the tooth is made more
...ant to decay.

...nical tests have shown
...e regular use of
...te with MFP fluoride

significantly reduces the incidence of caries. Thus, the use
...of Colgate in conjunction with your fluoride applications and
...regular dental treatments should result in an even greater
...reduction in the number of cavities.

And it's good to know that the staining of teeth which can
...be a problem with stannous fluoride is not a problem with
...Colgate's MFP. Remind your patients how important it is to
...back up your treatments with the kind of protection that

Colgate's MFP fluoride provides.
With Colgate, your professional
care does not have to end when
your patients go home.

"Colgate with MFP has been shown to be
an effective decay-preventive
dentifrice that can be of
significant value when used
in a conscientiously applied
program of oral hygiene
and regular professional care."



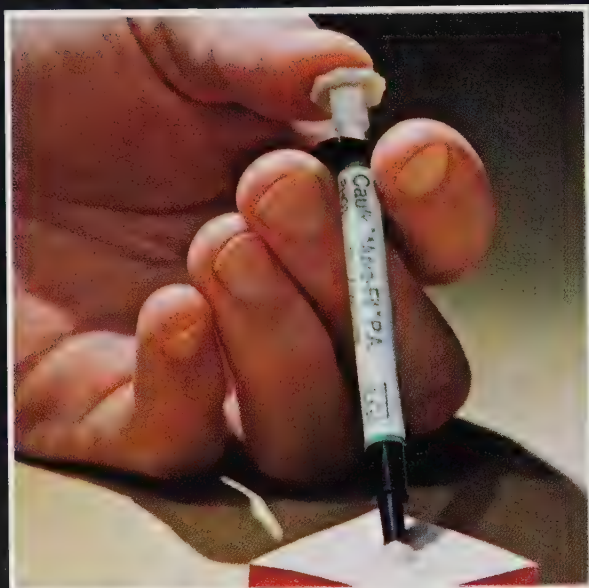
Canadian Dental Association

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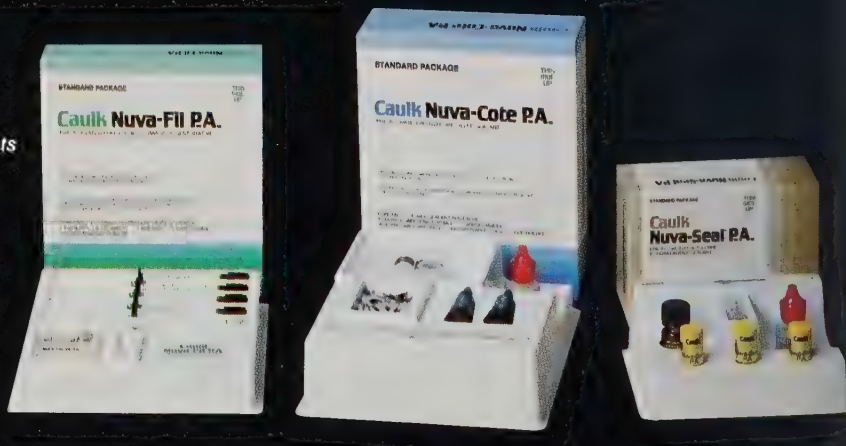
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Hubert E. Drouin

CDA appoints new executive director

Travelling, jogging, photography — Hubert E. Drouin, recently appointed executive director of the Canadian Dental Association, likes them all.

Mr. Drouin, whose appointment to CDA became effective last month, was educated at St. Patrick's College in Ottawa and is a graduate of Ottawa Teachers' College. He was born in Cornwall, Ontario and has resided in Ottawa for 10 years.

In 1965, Mr. Drouin joined Bell Canada in Cornwall as commercial assistant, supervising representatives responsible for customer relations. After transferring to Ottawa in 1969, he was promoted to manager of the business office serving Ottawa and Ottawa Valley districts.

Formerly with the Canadian Lung Association

Mr. Drouin joined the Canadian Lung Association in 1971 as executive secretary. In this capacity he worked closely with committees of volunteers and the Association's governing Board of Directors.

Describing himself as a "fair to middling" photographer, Mr. Drouin also has another hobby — jogging. A member of the Ottawa Athletic Club he admits he's "hooked on running" and jogs three times a week, frequently in the company of his wife, the former Diane Paquette. His eight-year old son, Paul, however, isn't as keen. "You just can't convince an active child that it's good for him to run around a boring track," says Mr. Drouin.

Mr. Drouin has travelled extensively across Canada, in the United States and to Europe. His most recent trip was a vacation to Disneyworld in Florida with his wife and son.



Hubert Drouin, newly-appointed executive director of the Canadian Dental Association.

Hubert E. Drouin est le nouveau directeur général

Les voyages, la course à pied et la photographie, tels sont les passe-temps préférés d'Hubert E. Drouin, le nouveau directeur général de l'Association Dentaire Canadienne. Son entrée en fonction remonte au mois dernier.

Éduqué à Ottawa au collège St-Patrick et à l'Ottawa Teachers' College, M. Drouin est natif de Cornwall, en Ontario. Il a élu résidence à Ottawa il y a dix ans.

Il avait amorcé sa carrière à Cornwall, à titre d'adjoint commercial au service de la compagnie Bell Canada. Il surveillait alors le travail des représentants chargés des relations avec la clientèle. Muté à Ottawa en 1969, il fut promu au poste de directeur du bureau d'affaires desservant les districts d'Ottawa et de la vallée de l'Outaouais.

C'est en 1971 que M. Drouin entra au service de l'Association Pulmonaire du Canada, à titre de secrétaire administratif. Dans ces fonctions, il

oeuvre en étroite collaboration avec les comités de bénévoles et le conseil d'administration de l'association.

Selon sa propre description, M. Drouin est un photographe "passable". Il a une autre passion, la course à pied. Il avoue ne plus pouvoir s'en passer, s'y adonnant trois fois par semaine, souvent en compagnie de sa femme Diane. Il appartient au Club athlétique d'Ottawa.

Son fils de huit ans, par contre, ne suit pas les "traces" paternelles, du moins pas à la course. "Je n'ai pu convaincre Paul, un enfant fort actif, qu'il avait besoin de courir pour se tenir en forme", raconte M. Drouin. "Il trouve très monotone de courir sur une piste alors qu'on peut trotter dans des endroits bien plus amusants quand on est enfant".

M. Drouin a beaucoup voyagé, tant au Canada qu'aux États-Unis et en Europe. Son dernier voyage l'a mené à Disneyland (Floride), pendant ses vacances avec sa femme et son fils.

Definition modified slightly

Life membership problems considered by Board of Governors at March meeting

Chaired by Dr. Nick Mancini, the Canadian Dental Association Board of Governors' Meeting was held in Ottawa, March 12 and 13.

The appointment to the Board of Dr. Yves Tellier was announced. Dr. Tellier replaces president-elect Dr. Clyde Covit as a Quebec representative. He has also assumed the responsibilities of executive liaison with the Editorial Board of the Journal and executive liaison for Information Services. Dr. Tellier is a member of Executive Council.

CDA president Dr. Rod Moran and Dr. Covit were named delegates to the 1979 FDI Congress in Paris and past president, Dr. Donald Rife was appointed chairman of the Membership Committee.

Life Membership

The definition of a CDA Life Member in the Letters Patent and Association By-Laws states that: "Life members shall consist of those dentists, who, after 40 years of service to the profession or, having attained the age of 65 years and who are presently members of the Canadian Dental Association, whose applications for life membership have been approved by the Executive Council."

A resolution passed at the Board of Governors' Meeting modifies this definition slightly by waiving the requirement "and who are presently CDA members" for the year of 1979. The Board agreed that this resolution is in the best interest of former active members for whom the creation of the 40 year life membership category has created some confusion and hardship.



CDA president-elect Dr. Clyde Covit (left) and president Dr. Rod Moran addressed the March Board of Governors' meeting.

CDSPI

Nova Scotia governor, Dr. Carl Dexter advised the Board that some of the smaller provinces, namely those in eastern Canada, are unhappy with the representational structure of CDSPI. The Board, however, agreed that the Board of Directors of CDSPI be composed of one representative from British Columbia, one representative from Alberta, one representative from Saskatchewan and Manitoba and one representative from each of the provinces of Quebec and Ontario. One representative will serve the Atlantic provinces and two representatives from CDA (one from Ontario and one from Quebec) will also sit on the CDSPI Board.

Insurance

The Board agreed that corporate bodies be informed of CDA's intention to hold a two-day meeting of the Provincial Benefit Committee chair-

men on June 22 and 23 in Toronto. Insurance needs and requirements of each province will be assessed at this meeting and time will be made for a question-and-answer session to discuss the purpose of insurance plans and their structure.



The meeting was chaired by Dr. Nick Mancini.



Christine Craig, daughter of Dr. Elaine Gordon, took a close look at the healthy teeth of Jack Frost with the help of Diane Meehan of the Freckles and Coal Dust Puppet Company, producers of "The Price is Bite", a puppet show sponsored by the Nova Scotia Dental Association to promote April as National Dental Health Month.

Puppet show in Nova Scotia aids in dental health

"The Price is Bite", a puppet show produced by the Freckles and Coal Dust Puppet Company of Sydney, Nova Scotia and sponsored by that province's Dental Association, was the highlight of activities promoting good dental health last month.

A total of 32 shows were performed at eight locations in the province promoting National Dental Health Month in Nova Scotia.

The show included appearances by Jack Frost, Susie Snowflake, Willy Wind and Mother Nature and the action centered around the discovery that Jack Frost had lost his bite over the summer months.

Schoolgirls take top awards in CDA contest

Five-year old Jennifer Hau from Vancouver, British Columbia was a big winner in the National Dental Health Month Poster Contest in April. Jennifer's drawing of a girl holding a tooth brush in one hand and an apple in the other caught the attention of all three contest judges, Col. Vic Lanctis, Ward Officer Muriel Fletcher, dental hygienist and Marie Cosgrave, information officer, Canadian Dental Association. Col. Lanctis and Ward Officer Fletcher are both members of the Canadian Forces Dental Services.

Other winners in the Poster Contest were Bonnie Dilts, age nine, a student at Baynes Lake Elementary School in Ilko, British Columbia and Erica Brindley, 11, from Calgary, Alberta.

The posters were judged in three categories: age seven and under; age eight and nine; and age ten to 12. Judging took place at the local level then provincially and finally national at CDA headquarters in Ottawa. The winners each receive a bicycle.



Marie Cosgrave (left), CDA public information officer, Col. Vic Lanctis and Ward Officer Muriel Fletcher display the three winning posters in the National Dental Health Month Contest.

Management seminar attracts 70 participants

More than 70 dentists and auxiliaries attended a recent seminar on office management in Fredericton, New Brunswick.

Organized by the Continuing Education Department, Dalhousie School of Dentistry, Halifax, Nova Scotia and Dr. Mike Horsman of the New Brunswick Dental Society, the seminar featured presentations by Dr. Al MacLeod and Dr. Steven Brayton,

both from Dalhousie University and Stuart Pye, an independent chartered accountant from Halifax. The April 7 program drew representatives from all four Atlantic Provinces.

Dr. MacLeod discussed the human factors involved in office management while Dr. Brayton broached the problems of the physical set-up of a practice. Pye dealt with practice finances.

Sudbury strike affects city's dentists

When Inco miners went on strike in Sudbury last September, few people considered the effect the walk-out

would have on resident professionals — including dentists.

In a place where small businesses

are suffering from the lack of customers and miners are depleting their life savings in an effort to continue day-to-day living and augment their monthly strike pay, a visit to the dentist has, in the words of one Sudbury practitioner, "become an expendable item."

"Nobody likes to talk about it," said Dr. John Chalmers in a recent interview with the Journal, "but we're not seeing our usual number of patients at the moment."

Dr. Chalmers' pre-strike work load was a busy four and a half day week. Now he works just four days and even those are slack. Dentists are dealing mostly with emergencies, says Dr. Chalmers.

"It's a general thing in this city," says Dr. Chalmers referring to the overall effects of the strike on Sudbury's economy. "Most of my friends who are dentists have had to lay off staff to cut down on overhead."

Before the strike began last fall, Dr. Chalmers employed a receptionist and an assistant. Now he and his assistant handle all the work with the help of a telephone answering machine.

Even with the slow-down on appointments for dental work, Dr. Chalmers says he has heard no news of dentists leaving town. He too is optimistic and looks for better days ahead. "Everybody just thinks it's got to end," he says.

Tedman elected to Committee

Walter B.M. Tedman, director of communications with the Ontario Dental Association, was recently elected to the Executive Committee of the Royal Canadian Military Institute. Lt. Tedman is editor of "SITREP", the official publication of the Institute.

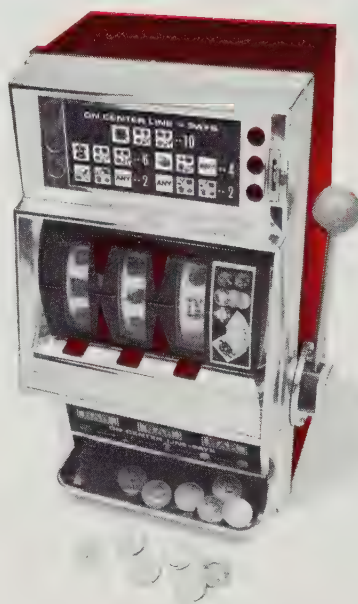
Sure thing

The very next time you're tempted to gamble on a mail order bargain, ask yourself if it's really worth the hassle of getting goods through customs; coping with short shipments, substitutions, returns, repairs and delayed deliveries. Then, to add insult to injury . . . they ask for "up front" money. Caveat emptor . . . let the buyer beware!

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Furthermore, findings from the Workshop indicated that no fluoride solution was more caries-inhibiting than neutral sodium fluoride.

The Product

New Listermint with Fluoride is a pleasant-tasting neutral pH mouthwash containing 0.22 mg/ml of sodium fluoride (100 ppm fluoride ion). This concentration of fluoride ion was tested in some of the studies reviewed by the Maryland Workshop, and, the Health Protection Branch has approved the brand's New Drug Submission, which provided evidence that 100 ppm fluoride ion (as found in Listermint with Fluoride) is an effective level for caries reduction. We hope you and your patients will take the opportunity to confirm the conclusions of the Maryland Workshop with our new product.



IN THE NEWS

B.C. dentists out to beat high stress

A pilot study to define ways to help dentists deal with high stress situations has been set up in British Columbia.

OBITUARIES

BOISVERT, Armand, graduated University of Montreal, 1926. Died January, 1979.

• • •

ISRAEL, Hyman, graduated McGill Univeristy. Born May 29, 1903, died October, 1978.

• • •

LANGSWORTH, Robert S., former director of dental services for New Brunswick, died February, 1979 at the age of 72 in Fredericton, Graduated University of Toronto School of Dentistry, 1929.

• • •

LIU, Willa, W.L., in Windsor, Ontario, on February 9, 1979 after a lengthy illness. Dr. Liu graduated from West China Union University in 1945.

• • •

MACAULAY, D.W., on December 27, 1978 in Sydney, Nova Scotia. Dr. Macaulay graduated from Dalhousie University in 1950.

• • •

MARTIN, Joseph, pioneer dentist in the Timmins area. Died February, 1979 at his home in St. Petersburg, Florida.

• • •

VINIOT, J.L., of Bathurst, Nova Scotia, died February 28, 1979, Graduated University of Maryland, 1915.

A group of eight dentists, under the direction of Vancouver psychologist Ian Percy, will meet over a five-week period to take a look at some of the personal and emotional effects of running a dental practice.

Percy, and John Anderson, with the Canadian Training Resources Group Inc., will be helping the dentists learn to effectively manage financial, professional and personal stress situations.

Two exploratory meetings were held before the seminars began, explained Dr. Jack Hanvey, a Vancouver dentist who has been directly involved with setting up the program. Now that the eight dentists are established as a group, they will run five working sessions dealing with personal stress, relaxation training, interpersonal skills development, assertiveness training and time and practice management. The first seminar was held March 28.

linked with dentistry," said Hanvey, "and now we're attempting to work things out and look ahead with optimism."

Although Percy and Anderson have not conducted this type of seminar with dentists before, they have done a similar program with large groups of hospital staff members across Canada focusing on organizational development and effective time management. "The program in Vancouver is an extension of the larger seminars to a smaller, more intimate group," explained Anderson.

According to Anderson, the crisis period for many dentists is during the first ten years of practice. Inevitably, they reach a point of "burn-out" but instead of coping with the situation and recognizing it for what it is, they interpret it as a personal weakness and compound the problem.

Often working in isolated office situations, dentists rarely have anyone to discuss their professional problems with openly, said Anderson. Even in a group office, because of busy schedules, they don't really sit down and talk things out. "There are very few of the Marcus Welby types who can take difficult situations easily," said Anderson.

High divorce rate . . .

A little-talked-about fact in dentistry is the high suicide rate, says Anderson. According to Dr. Hanvey, dentists also have a high divorce rate which he relates to high stress. "We've recognized unique problems

CDA Retirement Savings Plan

Unit values of the Canadian Dental Association's Retirement Savings Plan stood as follows on March 31, 1979:

<i>Common Stock Fund</i>	\$41.133
<i>Fixed Income Fund</i>	\$22.064
<i>Guaranteed Fund</i>	\$15.598
<i>Balanced Fund</i>	\$11.659

Total assets (market value) of the plan were \$34,934.24.

The previous month's figures, as

of February 28, 1978, stood as follows:

<i>Common Stock Fund</i>	\$39,630
<i>Fixed Income Fund</i>	\$21,784
<i>Guaranteed Fund</i>	\$15,460
<i>Balanced Fund</i>	\$11,310

Total assets (market value) of the plan were \$33,982,622.78.

For further information write to: CDA-sponsored Pension and Insurance Plans, 234 St. George Street, Toronto, Ontario M5R 2P2.

Results part of DAT

Chalk grading committee examines work of 1,700 dental school applicants



Dr. John Eisner

Dr. John Eisner — Dalhousie dean

Dr. John Eisner was recently appointed assistant dean of Dentistry, Dalhousie University in Halifax.

A native Albertan, Dr. Eisner graduated from the University of Alberta's School of Dentistry in 1968 and received his doctoral degree four years later from the University of Michigan.

As assistant dean, Dr. Eisner will be responsible for program development and academic affairs in the school that is presently going through an expansion period.

Before coming to Dalhousie, Dr. Eisner was acting chairman of the Department of Community Dentistry at the College of Medicine and Dentistry in New Jersey. He also served as assistant dean of planning for one year at the same institution.

Dr. Eisner has been a consultant on several clinical grants and is completing a project for an 11-state regional testing agency aimed at improving their licensing examination methods.

Ten years ago, Dr. Walter Teteruck of the University of Western Ontario attended his first chalk grading session at the old CDA building in Toronto. At that time, close to 800 students were vying for admission to Canada's Schools of Dentistry and were writing the CDA dental aptitude test.

Now, Dr. Teteruck, chairman of the chalk grading committee, works with six other dentists from across Canada examining the handiwork of up to 1,700 hopefuls.

The chalk carving exam, just one part of the aptitude test that is mandatory for anyone wanting to attend dental school, is considered "a good predictor of psycho-motor ability" says Dr. Teteruck. Although the number of applicants has increased in the

last decade, he points out that marks have remained constant because of a "normalized curve" grading system.

In 1973, the chalk carving test was dropped because each piece needed to be hand graded and the volume of work required to mark the work of over 2,000 students became unmanageable. Ironically, the number of students writing the dental aptitude test peaked at 2,300 in 1975 — the year chalk carving was reinstated as a requirement at the request of Canadian dental faculties. It was, and still is, considered a reliable measure of a student's motor ability and results are looked at closely when admission decisions are made.

Chalk carving has been eliminated as an entrance requirement in the United States, where close to 20,000 people try the dental aptitude test each year, simply because marking the work is logistically impossible.



Dr. Peter Pronych of Dalhousie, a member of the chalk grading committee.

CDHA appoints new editor

Stephanie Nagle has been appointed editor of the Canadian Dental Hygienists' Association publication.

A 1975 graduate of the University of Toronto dental hygiene program, Mrs. Nagle also has a B.Sc. degree from the same university. She lives in London, Ontario where she has been working as a research assistant at the University of Western Ontario.

LES ACTUALITÉS

Une étude pilote en Colombie-Britannique

Huit dentistes étudient le stress

Une étude pilote visant à déterminer les moyens d'aider les dentistes à faire face aux situations de grand stress a été mise sur pied en Colombie-Britannique.

Sous la direction d'un psychologue de Vancouver, M. Ian Percy, un groupe de huit dentistes se réunira une fois par semaine pendant cinq semaines pour étudier certaines des conséquences personnelles et émotives qu'occasionne l'exploitation d'un cabinet de dentiste.

M. Percy et son collègue John Anderson, du Canadian Training Resources Group Inc., aideront les dentistes à apprendre comment faire face efficacement au stress se manifestant dans les domaines financier, professionnel et personnel.

Deux réunions préparatoires ont eu lieu avant le début des colloques hebdomadaires, a expliqué le Dr Jack Hanvey, dentiste de Vancouver, qui a participé à l'organisation du programme. Il s'agissait tout d'abord d'instituer un certain esprit de groupe aux huit dentistes participants. Ils étaient ensuite prêts à s'attaquer aux cinq colloques portant sur le stress personnel, l'apprentissage de la détente, l'épanouissement des aptitudes à communiquer avec les autres, l'apprentissage de l'affirmation de soi, et la gestion du temps et d'une pratique professionnelle. Le premier colloque avait lieu le 28 mars.

MM. Percy et Anderson n'ont pas fait ce genre d'expérience avec des dentistes auparavant, mais ils ont mené un programme du même genre avec des groupes considérables de personnel d'hôpitaux d'un bout à l'autre du pays, insistant surtout sur l'amélioration des organisations et la gestion efficace du temps. "Le programme de Vancouver représente l'adaptation des mêmes principes à un groupe plus restreint", explique M. Anderson.

Selon lui, les dentistes font face à une période critique au cours des dix premières années de l'exercice de leur profession. Ils en arrivent inévitablement à un stade d'épuisement et, plutôt que d'identifier la situation telle qu'elle est, ils attribuent leur état de grande lassitude à une certaine lâcheté et ne font qu'empirer leurs difficultés.

Les dentistes travaillent très souvent seuls et ont rarement l'occasion

de discuter ouvertement de leurs problèmes professionnels avec quelqu'un, explique M. Anderson. Même quand plusieurs dentistes partagent un cabinet, ils n'ont pas le temps de s'asseoir et de parler de ces questions à cause de leur horaire très chargé. "Il n'y a pas beaucoup de "Marcus Welby", capables de faire face à n'importe quelle situation facilement", conclut M. Anderson.

Les contributions personnelles ont fléchi d'un peu plus de \$2,000

Les contributions personnelles au Fonds canadien pour l'éducation dentaire ont fléchi d'un peu plus de \$2,000 en 1978. Ces dons représentaient la principale source de revenus d'exploitation du FCED en 1977 et en 1976. Or, selon le Dr James A. Guest, président du conseil fiduciaire du Fonds, les contributions personnelles totalisaient \$61,400 l'année dernière, alors qu'elles s'établissaient à \$63,654 en 1977.

S'adressant au bureau des gouverneurs de l'ADC, lors de sa réunion de mars, le Dr Guest a fait remarquer que les contributions d'entreprises commerciales et industrielles ont, en revanche, atteint l'an dernier plus de \$75,000, sommet sans précédent.

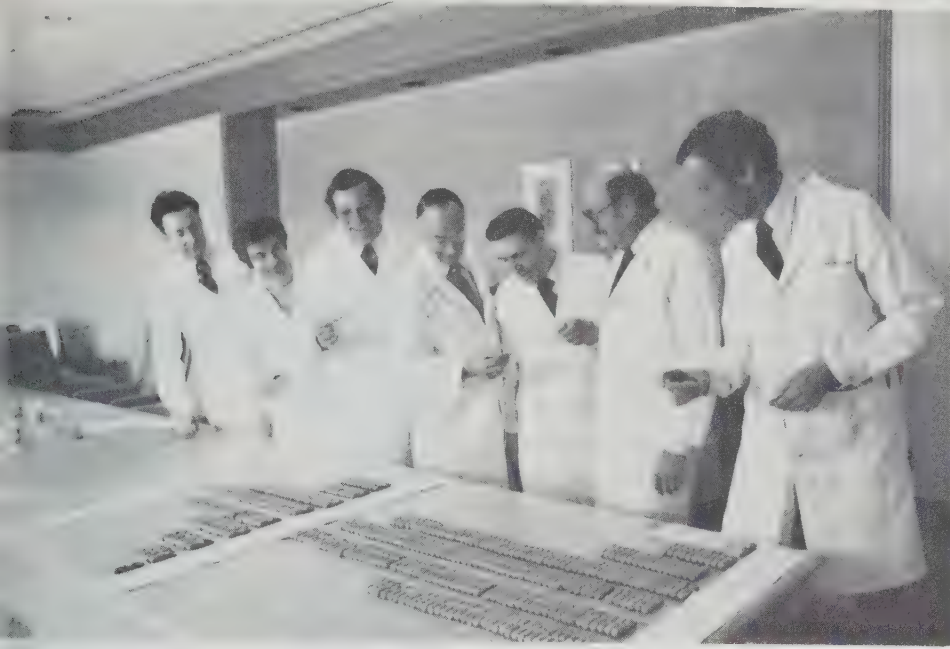
En tout, les fonds du FCED s'élèvent à \$280,544, soient des revenus d'exploitation de \$233,544 et une somme de \$57,000 sous forme de souscriptions aux fonds de dotation déjà existant. Le Dr Guest a insisté sur la générosité du Dr Lorne E. MacLachlan, qui a institué en 1973 un fonds personnel de dotation de \$45,000 et y a versé en janvier de l'année dernière une somme additionnelle de \$55,000. Les revenus annuels provenant de ce fonds ont été répartis également entre

les universités Dalhousie, McGill et de Toronto. En faisant son dernier don, le Dr MacLachlan a toutefois spécifié qu'il voulait voir l'Université de Western Ontario bénéficier également de ce fonds.

Le Dr Guest a également avisé le Bureau que le Toronto Academy of Dentistry Crown and Bridge Study Club avait ajouté la somme de \$2,000 au fonds de dotation qu'il a institué en 1976.

Pour sa part, le FCED a consacré \$140,000 à l'éducation et la recherche dentaires l'an dernier, à savoir \$12,000 de moins qu'en 1977. Ce fléchissement résultait surtout d'une diminution du nombre de bourses de formation des enseignants, a expliqué le Dr Guest.

Il a ajouté que deux subventions avaient été autorisées pour l'année 1979. Le Dr J.A. Reid, de l'Université de Western Ontario, recevra la somme \$2,500 pour une étude intitulée "Dental Radiation Barriers". Une subvention jusqu'à concurrence de \$2,200 a été allouée à un projet d'évaluation de la personnalité (Personality Testing Project), sous la direction du Dr Marcia Boyd, de l'Université de la Colombie-Britannique.



De gauche à droite: Dr Peter Pronych, Dalhousie; Dr Norman Tardiff, Laval; Dr Leonard Johnson, Western Ontario; Dr William Sanders, McGill; Dr Walter Meyer, Alberta; Dr Walter Teteruck, Western Ontario; et Dr Bruce Hord, Toronto.

Près de 1,700 étudiants se disputaient l'admission

Il y a dix ans, le Dr Walter Teteruck, de l'Université de Western Ontario, prenait part pour la première fois à une évaluation du test de la craie, dans le vieil immeuble de l'ADC à Toronto. Près de 800 étudiants se disputaient alors l'admission dans les écoles de dentisterie au Canada et suivaient l'examen d'aptitude dentaire de la SDC.

Le Dr Teteruck est maintenant président du comité responsable et évalue en compagnie de six autres dentistes canadiens l'oeuvre de quelque 1,700 candidats pleins d'espoir.

L'examen de sculpture sur craie, partie intégrante de l'examen d'aptitude obligatoire pour tout postulant à une école de dentisterie, est considéré comme une indication fiable de l'habileté psychomotrice, affirme le Dr Teteruck. Malgré une augmentation du nombre de candidats au cours de la dernière décennie, il fait remarquer que les notes sont demeurées constan-

tes en raison de la courbe normalisée du système de classement.

Le test avait été abandonné en 1973, car l'évaluation du travail de plus de 2,000 étudiants constituait un travail gigantesque. Fait ironique, le nombre d'étudiants subissant l'examen d'aptitude dentaire a atteint un sommet en 1975, à savoir 2,300; c'est cette même année que le test de sculpture sur craie a été adopté de nouveau à la demande des facultés canadiennes de dentisterie. On le considère donc toujours comme un moyen fiable d'évaluer l'habileté psychomotrice de l'étudiant et on en examine soigneusement les résultats au moment des décisions définitives quant à l'admission des étudiants.

Néanmoins, aux États-Unis, où plus de 20,000 candidats se présentent à l'examen d'aptitude dentaire chaque année, le test a été éliminé comme condition d'admission en raison de la tâche impossible que représente l'évaluation des résultats du test.

Les étudiants se sont joints à l'ADC

La campagne de recrutement étudiant de 1978-1979 a procuré à l'ADC un succès sans précédent auprès des étudiants canadiens en dentisterie. Un nombre record de 93 pour cent des étudiants se sont joints à l'ADC, par rapport à 75 pour cent l'année précédente.

À l'Université de la Saskatchewan et à celle de Western Ontario, le taux de participation s'est élevé à 100 pour cent, grâce aux efforts des représentants étudiants Craig Meyers et William Leskiw.

En traduisant ces pourcentages en nombres, on constate que 1,847 des 1,982 étudiants inscrits dans des facultés canadiennes de dentisterie appartiennent désormais à l'ADC.

À L'Université de Toronto, Sharon Boyd a recruté 484 nouveaux membres (97 pour cent de l'effectif étudiant), alors qu'Audrey Sherman a remporté un taux de succès de 78 pour cent (263 nouveaux membres) à l'Université de Montréal. Quatre-vingt-seize pour cent (138 étudiants) de l'effectif étudiant de McGill s'est joint à l'ADC grâce au travail de Philip Stulginski, tandis que Jacques Chenevert a recruté 93 des 97 étudiants en dentisterie de l'Université Laval.

Dans les Maritimes, Michael Gorman Doyle a été fructueux dans 92 pour cent des cas à Dalhousie; à l'autre extrémité du pays, 93 pour cent (148) des étudiants de l'Université de la Colombie-Britannique se sont joints à l'ADC par l'entremise de David Baird.

Enfin, 94 pour cent (187) des étudiants de l'école de dentisterie de l'Université de l'Alberta ont répondu à l'appel de Cameron MacLean, et 89 pour cent (115) des étudiants de l'Université du Manitoba se sont faits recruter par Roger Watson.

LES ACTUALITÉS

Au Conseil l'Exécutif

Le Dr Yves Tellier remplacera le Dr Clyde Covit à titre de représentant du Québec

La dernière réunion du bureau des gouverneurs de l'Association Dentaire Canadienne s'est tenue à Ottawa, les 12 et 13 mars, sous la présidence du Dr Nick Mancini.

La réunion a donné lieu à la nomination du Dr Yves Tellier au sein du Conseil. Il remplacera le Dr Clyde Covit, président désigné, à titre de représentant du Québec. Il lui incombera également d'assurer la liaison avec le Comité de rédaction du Journal.



Dr Yves Tellier

Le bureau des gouverneurs a, d'autre part, nommé le Dr Rod Moran, président de l'ADC, ainsi que le Dr Covit, comme délégués de l'ADC au congrès de 1979 de la FDI, à Paris. En outre, le Dr Donald Rife s'est vu nommé président du Comité de recrutement.

CDSPI

Le Dr Carl Dexter, représentant de la Nouvelle-Écosse auprès du Bureau, a avisé ce dernier que certaines des provinces moins peuplées, notamment celles de l'Est du pays, ne sont

pas satisfaites du système de représentation au CDSPI. Le Bureau s'est dit toujours d'accord pour que le Conseil d'administration du CDSPI soit composé d'un représentant de la Colombie-Britannique, d'un de l'Alberta, d'un pour Saskatchewan et le Manitoba, ainsi que d'un représentant du Québec et d'un de l'Ontario. Un représentant veillera aux intérêts des Provinces maritimes, et deux délégués de l'ADC (un de l'Ontario et l'autre du Québec) siégeront également au Conseil d'administration du CDSPI.

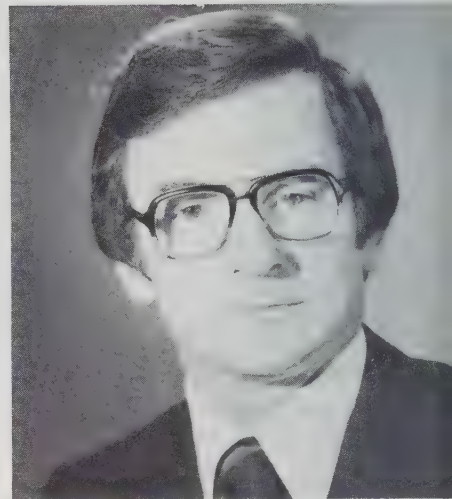
ASSURANCES

Le bureau des gouverneurs estime que l'on devrait aviser les corps constitués de l'intention de l'ADC de tenir une réunion de deux jours des présidents des Comités provinciaux d'indemnisation, les 22 et 23 juin, à Toronto. On en profitera pour évaluer les besoins de chaque province en matière d'assurances; on réservera suffisamment de temps pour une période de questions et réponses au sujet des régimes d'assurances et de leur fonctionnement.

CONGRÈS

Le bureau des gouverneurs a félicité le Dr Ralph Crawford et l'Association Dentaire du Manitoba pour leur travail lors du Congrès de l'ADC à Winnipeg, en septembre dernier. On a également présenté le schéma de travail du comité organisateur du congrès de Québec.

Enfin, la réunion a donné lieu à l'acceptation en principe des Lignes de conduite et Directives de l'ADC relatives au congrès nationaux.



Dr Alain Vaillancourt

Dr Vaillancourt est le doyen de médecine dentaire

L'Université de Montréal a annoncé récemment la nomination du Dr Alain Vaillancourt au poste de doyen de la Faculté de médecine dentaire pour un mandat de quatre ans, à compter du 1er juin 1979.

Le Dr Vaillancourt a obtenu son baccalauréat ès arts à l'Université de Sherbrooke en 1955, puis a mérité son doctorat en chirurgie dentaire à l'Université de Montréal en 1959. Il a pratiqué la dentisterie générale à Sherbrooke jusqu'en 1967, alors qu'il a accepté un poste à plein temps de professeur adjoint à l'Université de Montréal. En 1971, il a obtenu sa M.Sc. en prosthodontie à l'Université de l'Ohio.

Il a été promu au poste de professeur associé à l'Université de Montréal en 1973 et, la même année, a assumé la direction de la clinique de prosthodontie. Enfin, en 1975, il accédait au poste de doyen associé.

Speakers from U.S. and Canada

Scientific program covers variety of dental topics

The 1979 Canadian Dental Association National Convention will take place September 9 — 12 at the Convention Centre in Quebec City.

Sunday night, September 9, Convention organizers will be on hand to welcome delegates and their guests. The President's Ball is scheduled for Monday evening and Tuesday's social program features a dance 'Tuesday Night Fever.'

SCIENTIFIC PROGRAM

The scientific program, divided into English, French and bilingual ses-

sions, features speakers from both Canada and the United States.

Subjects to be covered include paedodontics, radiology, prosthodontics, periodontics, operative dentistry and endodontics, among others.

Briefly, speakers include Dr. Steven Wei (Paedodontics and Prevention), Dr. Denis Forest (Dental Radiology), Dr. Pierre Desautels (Dental Materials), Dr. Robert Barrickman (Facial Pain), Dr. Bruce Larrick (Photography and Communication in Dentistry), Dr. William Laney (The Dentist

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A 'how-to' program

Photography report clicks with 'hobbyist' or clinician



Dr. Bruce Larrick

Dr. Bruce Larrick graduated from Tufts University with a DMD in 1970. He is currently in private practice in Florida and is associate professor in audio-visual production, University of Florida. Dr. Larrick has received several awards in the field of educational communication aids.

The topic of Dr. Larrick's address to the CDA National Convention delegates is 'Photography and other Communication Skills For the General Practitioner.' This presentation is a report on contemporary communications in dentistry. Dental photography, including how to take pictures and how to use them effectively, will be discussed.

The program is designed for both the inexperienced 'hobbyist' and the clinician/photographer.



The city of Québec, founded 368 years ago by Samuel de Champlain, French soldier, navigator, geographer and explorer, is one of America's most historic sites and resembles old European cities more than any other on this continent.

Unique in every way, Québec exudes almost four centuries of history, yet is one of the most modern regions of North America.

Capital of the province of Québec, it is the only city in North America completely surrounded by a stone wall.

Perched on a 350-foot cliff dominating the St. Lawrence river, Québec is a city of stone walls and gates, of ancient cannons, old churches and narrow streets. It's also a city of tree-lined boulevards and green parklands.

Historically, Québec is a military town and a seat of government. In more than three and a half centuries, that aspect has not changed. But, whatever attracts millions of visitors to "la vieille capitale", its chief claim to fame is still the European charm and the French way of life that have made it one of the world's great tourist centres.

CONVENTION

Orthodontics in General practice

Grieve Memorial Lecture presented by Dr. Jean-Louis Bertrand

This year's Grieve Memorial Lecture will be delivered by Dr. Jean-Louis Bertrand. Dr. Bertrand will discuss simple orthodontic cases in general practice illustrating the importance of proper diagnosis, treatment planning and procedures in intercepting or correcting a developing malocclusion. This lecture, scheduled for 9 a.m. Monday, will be presented in English and French.

Dr. Bertrand has been exclusively in the practice of orthodontics since 1956 after receiving a Certificate in Orthodontics from the University of Montreal. He graduated from the University of Montreal Dental Faculty in 1953. A Fellow of the Royal College of Dentists of Canada, Dr. Bertrand has served as professor in the Department of Orthodontics, University of Montreal.



Dr. Robert Barrickman

Dr. Robert Barrickman to discuss facial pain

Dr. Robert Barrickman, who will present a paper 'Differential Diagnosis and Treatment of Facial Pain', is a hospital staff member in Pennsylvania. He has also served as assistant professor, full-time, Department of Periodontology at the University of Pittsburgh School of Dental Medicine.

Dr. Barrickman will discuss diagnosis of facial pain including such topics as tic douloureux, trigeminal neuralgia, temporomandibular joint syndrome, fenestrations, trauma from occlusion and endodontics.

Dr. Clément Caron chairs Quebec Convention Organizing Committee

Dr. Clément Caron of Sillery, Québec is chairman of this year's Canadian Dental Association National Convention Organizing Committee.

Other committee members include: Dr. Ralph Barolet, Laval University, chairman, Scientific Committee; Dr. Claude Bellerose, Ancienne Lorette,

chairman, Social Committee; Dr. Jean Laporte, Québec City, chairman, Exhibit Committee; Dr. Benoit Tanguy, Cap-Rouge, chairman, Publicity Committee; Dr. André Rivard, Lévis, chairman, Technical Facilities Committee; Dr. Claude Bussière, Ste-Foy, chairman, Registration Committee; and Monique Gagnon, secretary.

Fifteen speakers set for scientific program

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in a Medical Institution), Dr. Murray S. Bloom (Computers in Dentistry), Dr. Paul Mercier (The Resorption of Alveolar Bone), Dr. Philip Hoag (Periodontics for the General Practitioner), Dr. William Gilmore (Recent Developments in Operative Dentistry), Dr. Roger Masella (The Relationship Between Fixed and Removable Prosthodontics), Dr. Paul Jean (Treatment Planning), Dr. Victor Legault (The Importance of Primary Dentition in Paedodontics), Dr. Carl Hawrish (Differential Diagnosis and Management of Pain in Endodontics) and Dr. A. Scheinin (Anticariogenic Product: Xylitol).

CDA NATIONAL CONVENTION CONGRÈS NATIONAL DE L'ADC

Québec, P.Q., Sept. 9-12, 1979

Registration and hotel reservation forms are included at the back of this issue.

Vous trouverez à la fin de ce numéro une formule d'inscription et de réservation d'hôtel.

INSCRIVEZ-VOUS
MAINTENANT

REGISTER
NOW

Les conférences seront en français et en anglais

Le Congrès de l'ADC se tiendra à Québec

Le congrès annuel de l'Association Dentaire Canadienne se tiendra à Québec, au Centre Municipal des congrès, du 9 au 12 septembre 1979.

Le comité organisateur sera heureux de vous accueillir dimanche, le 9 septembre, lors de la cérémonie d'ouverture. Le bal du président aura lieu le lundi soir. Quant au mardi soir, on se déchainera lors du "Tuesday Night Fever".

PROGRAMME SCIENTIFIQUE

Des conférenciers canadiens et américains couvriront la plupart des aspects de la dentisterie, tels que la

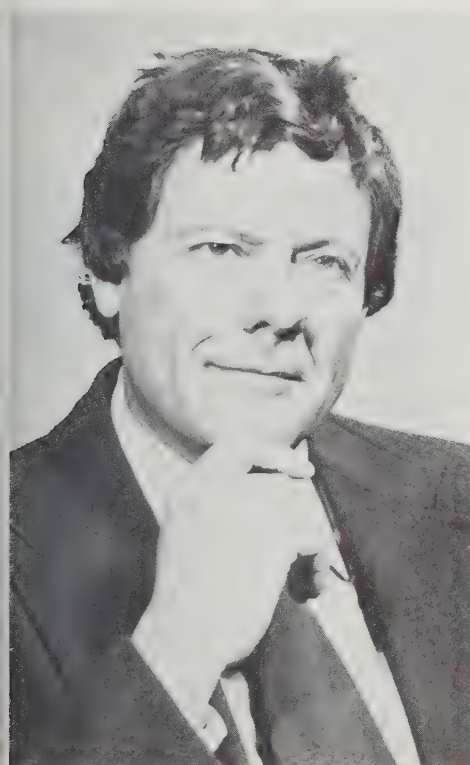
pédodontie, la radiologie dentaire, la prosthodontie, la dentisterie opératoire, l'endodontie, etc. . .

Ces conférences seront, soit en anglais, soit en français, soit traduites simultanément.

Parmi les conférenciers, on note: Docteur Steven H. Wei (Pédodontie et prévention); Docteur Denis Forest (Radiologie dentaire); Docteur Pierre Desautels (Matériaux dentaires); Docteur Robert W. Barrickman (Douleur faciale); Docteur Bruce Larrick (Photographie et audio-visuel en

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Dr Jean-Louis Bertrand présentera la conférence "Grieve Memorial"



Dr Jean-Louis Bertrand

La conférence "Grieve Memorial" sera présentée cette année par le docteur Jean-Louis Bertrand. Il discutera différents cas d'orthodontie que le généraliste peut rencontrer et traiter grâce à un diagnostic précoce et des traitements appropriés. Cette conférence sera présentée en anglais et en français, lundi le 10 septembre, à 9h00.

Le docteur Bertrand pratique l'orthodontie depuis 1956, année où il termina sa spécialité à l'Université de Montréal après y avoir obtenu son D.D.S. en 1953. De plus, il enseigne plusieurs années au département d'orthodontie de la Faculté de Médecine dentaire de l'Université de Montréal. En plus d'être membre de plusieurs associations professionnelles, il est Associé du Collège Royal des Chirurgiens-Dentistes du Canada.



CONGRÈS

Dr Clément Caron:

Directeur du comité organisateur du Congrès National

Dr. Clément Caron, Sillery, Québec, est directeur général du comité organisateur du Congrès National de l'Association Dentaire Canadienne à Québec.

Les autres membres du comité organisateur sont: Dr Ralph Barolet, École de Médecine Dentaire, Université Laval, Comité scientifique; Dr Claude Bellerose, Ancienne Lorette, Comité social; Dr Claude Bussière, Ste-Foy, Comité de l'inscription; Dr Jean Laporte, Québec, Comité des exposants; Dr André Rivard, Lévis, Comité des facilités techniques; Dr Benoît Tanguay, Cap-Rouge, Comité de publicité; et Monique Gagnon, Sillery, secrétariat.

Programme scientifique: conférenciers

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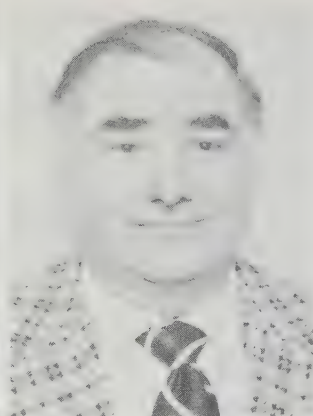
dentisterie); Docteur William R. Laney (Le dentiste en milieu hospitalier); Docteur Murray S. Bloom (L'ordinateur en dentisterie); Docteur Paul Mercier et son équipe (L'atrophie des crêtes alvéolaires); Docteur Philip M. Hoag (La périodontie et le praticien général); Docteur William H. Gilmore (Les derniers développements de la dentisterie opératoire); Docteur Roger Masella (La relation entre la prothèse fixe et amovible); Docteur Paul Jean (Planification des traitements); Docteur Victor Legault (La pédodontie, importance de la dentition primaire); Docteur Carl E. Hawrish (Diagnostic et traitement des douleurs pulpaires; et Docteur S. Scheinin (Produit anticariogène: Xylitol).

Jadis déconseillé, le brunissage des amalgames immédiatement après l'insertion est maintenant recommandé afin de réduire les possibilités des effritements marginaux.

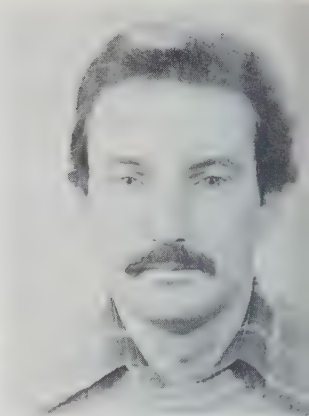
(Ref. J.P.D., Aout, 1978 p. 163 et Oct., 1978, p. 425)



Dr Clément Caron



Dr Ralph Barolet



Dr André Rivard



Dr Claude Bellerose



Dr Jean Laporte



Dr Benoît Tanguay

Dr Pierre Desautels:

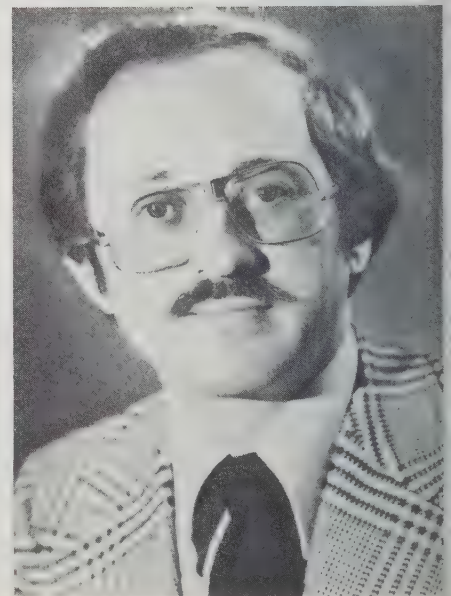
Nouveau concepts et critères de choix en matériaux dentaires

Résumé

Le conférencier fera brièvement le point sur la situation des amalgames riches en cuivre.

Après quoi, il s'attardera d'avantage sur les nouveaux matériaux à empreinte, particulièrement de type silicone (à polymérisation par addition).

Finalement, il nous fera part des résultats de ses recherches ainsi que de son expérience clinique avec la nouvelle génération de "composites" à particules sous-micrométriques et du ciment au verre ionomère. Une échelle d'abrasivité de dentifrice sera présentée si les résultats sont disponibles au moment de la conférence.



Dr Pierre Desautels

The current use of dental implants is reviewed. There exists poor evidence to support the viability of the concept as applied to date on this continent. However, the recent results of a Swedish study seem to offer a dramatic breakthrough in this context. Further longitudinal studies could offer the profession an expanded range of methods to treat the sequelae of edentulism.

Advanced residual ridge reduction: Alloplastic implants in prosthodontics

George A. Zarb, BChD, MS, DDS, MS, FRCD (C)
Toronto, Ontario

The incidence of partial and complete edentulism in Western countries is staggering. Its treatment has to contend with a denture-bearing area or residual ridge, characterized by an insidious, irreversible and apparently inevitable reduction in its bulk¹. Clinical experience suggests that the vast majority of complete denture problems are related to such a depleted bone support, which is often covered by thin, friable, non-resilient mucosa, and accompanied by an altered pattern of neuromuscular control. Furthermore, the increase in life span, accompanied by the biologic effects of ageing, elicits changes in the masticatory system which militate against successful long term prosthodontic therapy². In a therapeutic context, the edentulous, elderly patient with advanced residual ridge reduction presents the greatest challenge facing clinical dentistry today.

The literature is replete with techniques to cope with such a challenge. However, the problem has often been approached mechanically, with too little attention paid to the biologic reactions of the oral tissues. The most innovative and exciting of these techniques can be considered under two general headings: 1) the use of alloplastic oral implants; and 2) the acquisition of more denture-bearing area, either by ridge augmentation or by vestibuloplasty procedures. The latter topic will be the subject of a future page³.

Alloplastic materials used:

Several alloplastic implants have been used in prosthodontics and it is pertinent to review their respective roles:

Polymeric materials — The polymers have been used extensively in implant dentistry, mainly because of their apparent inertness and the ease with which they can be

prepared and moulded into complex shapes.⁴

A number of works⁵⁻⁷ have studied the use of plastic implants, principally in the form of acrylic resin roots or teeth. Earlier works⁸⁻⁹ described the use of frictional or mechanical retention to retain the implants in place. In recent years, the tendency has been to make replicas of natural teeth, paying careful attention to correct root length and morphology, and implant such replicas in the natural sockets. Hodosh and his associates¹⁰⁻¹¹ have published several papers in which they claim clinical success for prostheses implanted in humans for several years, and claim to have obtained penetration of tissue into roots made of porous acrylic material implanted in humans,¹² as well as similar successes with polymer-coated Vitalium pins. However, published photo-micrographs led Melcher and Bowen¹³ to doubt the validity of these conclusions, while Hammer¹⁴ rejected Hodosh's findings and corroborated Waerhaug and Zander's⁹ earlier observation that "the lifetime of such an implant is limited, and that implantation of artificial roots into tooth sockets is not likely to be of practical value in prosthetic dentistry."

Recent preliminary reports by Klawitter et al¹⁵ and by Ashman and Moss¹⁶ describe the fabrication, characterization and implantation of porous polymethylmethacrylate dental implants. The process allows for control of pore structure, enabling ingrowth of either bone or fibrous tissue, which will act to establish functional support as well as arrest apical epithelial proliferation. This technique heralds a new approach to the use of polymers in implantology, and reflects the influence of the porous implant systems which are currently dominating the field.

Bioceramic Materials — The concept of microporosity has found an extensive application in the area of bioceramic materials.

Several investigators have evaluated the biocompatibility

ity, porosity and resilience of these materials with two major approaches. One approach uses non-degradable ceramics such as calcium aluminate and aluminum oxide¹⁷⁻¹⁸ the other with ceramic systems that are slow to dissolve in the body environment¹⁹. These materials are highly porous ceramics which are coated on metal implants. The rationale for their use is that bone is expected to proliferate into the pores of the ceramic. The size of the pores can be varied in manufacture. They should be sufficiently large to readily accommodate the ingrowth of blood vessels and osteogenic cells which are expected subsequently to deposit new bones within the ceramic coating. Investigations of tissue ingrowth have revealed that an interconnected pore size of at least 100 micrometers is required to permit ingrowth of calcified tissue. For smaller pore sizes only fibrous tissue ingrowth occurs.

Hulbert et al.²⁰ utilized porous ceramic coatings on metal substrates to take advantage of the interface virtues of ceramics and to overcome their mechanical disadvantages. However, other problems arise in the bonding of the ceramic to metal materials, since these may be regarded as composite materials.

Biocarbons — While it is not strictly a ceramic, vitreous carbon has been used for dental implants and shares many of the properties of ceramic materials. It is produced by carefully controlled carbonization of certain cross-linked polymers, and is impervious and highly resistant to chemical attack. When implanted, it is reported to be inert and demonstrates apparent attachment of connective tissues to its surface.

Grenoble and associates²¹ reported favourable preliminary results for a commercial tooth implant system which was recently made available (Vitredent). This material is reported to be unusually compatible with body tissues and is superior to metals because it will not corrode in the physiologic environment. It is also believed to be superior to the polymers which can break down over extended time periods.

Composites — Composites have been developed and proposed as a coating material for metal implants²². Clinical application of these polytetrafluoroethylene-carbon composite materials have been under way for just under a decade, with the materials used as coatings for femoral head prostheses, temporomandibular condylar prostheses²³ and endosseous blade vents. Homsy²⁴ has suggested that early results with the material are promising and offer scope for a wide range of oral surgical and prosthodontic applications.

Metallic Implants — Metallic materials have received most use for implants because of the early emphasis on strength. Clinical experience and research investigations

have resulted in the use of three principal metallic types at the present time; stainless steel, cobalt-chromium alloys, and titanium and its alloys. Studies have shown that narrowly defined composition ranges for these alloys are essential to obtain adequate mechanical properties coupled with the necessary corrosion resistance in the tissue environment. The metallic implants used in dentistry are usually made out of cobalt-chromium or titanium alloys.

Mechanical methods have been used to retain and stabilize metal implants for several decades, and two main designs are in current use: the subperiosteal and the endosseous implants.

1. Subperiosteal implants are those which are placed on top of bone and under the periosteum, and were suggested by Dahl in 1943²⁵, and used clinically by Goldberg and Gershoff in 1949²⁶. The cast subperiosteal framework is usually of a stellite type alloy and is intended to accurately fit the alveolar portion of the body of either jaw²⁷. The casting may be retained by screws in the bone, and a number of projections penetrate the mucoperiosteum into the oral cavity. The suprastructure, which has often been made in other alloys, rests on these metallic projections, and it may be a fixed or removable prosthesis. In comparison to the endosseous implant, the subperiosteal variety is usually supported by basal rather than alveolar bone, suggesting a more stable bony support.

2. The endosseous implants are numerous in design with the "blade" type, pioneered by Linkow²⁸ enjoying extensive popularity. Such an implant is inserted into a slot cut in the bone of the mandible or maxilla and is retained in place by deposition of bony callus into perforations in the implanted blades. It has the advantage of maximum anchorage in the tissue, and this is achieved by the large size of the implant and its many perforations which are penetrated by new bone. Proponents of the blade vent claim that it gives satisfactory clinical service in a high proportion of cases, provided meticulous attention is paid to the design and insertion of the implant and to the manner in which it is used as an abutment.

The reports of the clinical successes with endosseous implants have led to strong sectarian allegiances for a particular design or technique and some remarkable liberties with implant design. But the impression that what was being claimed was based upon carpentry principles rather than upon scientific ones has lingered. (Figs. 1, 2 and 3) The absence of systematic preclinical procedures for rational selection of prosthetic materials is incongruous, and even intolerable in an era characterized by a medical research preoccupation with the biocompatibility of implant materials.²⁹

CEMENTED IMPLANTS

In 1972, Zarb and associates³⁰ observed that an im-



Fig. 1A

Implanted metal object does not become incorporated into bone as does an accepted bone graft; it remains as a foreign body, walled-off from the surrounding bone by a fibrous capsule. This occurred regardless of surface macro-irregularities and/or macroperforations (e.g. endosseous implants) which are equally incapable of effecting implant host integration. This observation was heightened by the enormous degree of unpredictability reported for subperiosteal and endosseous implants³¹.

The metallic implants used to date are characterized by two vulnerable features: (a) the biomechanical incompatibility between the implanted material and the surrounding bone; and (b) the transepithelial region, or the region of epithelial perforation. Furthermore, the concomitant surgical procedures produce varying degrees of trauma which are difficult to control. Bone resorption and unfavourable tissue response appear to be a common occurrence. Insufficient consideration has been given to the mechanical stress system acting on the supporting bone and to the desirability of simulating the natural supportive function of the periodontal ligament. This suggests that the design of implants and their relationship to the supporting bone should be reconsidered. It is only recently that detailed studies of the stress distribution in and around implants have been undertaken³².

Zarb et al³⁰ suggested that the requirements of (1) use of biologically acceptable materials, (2) adequate phys-

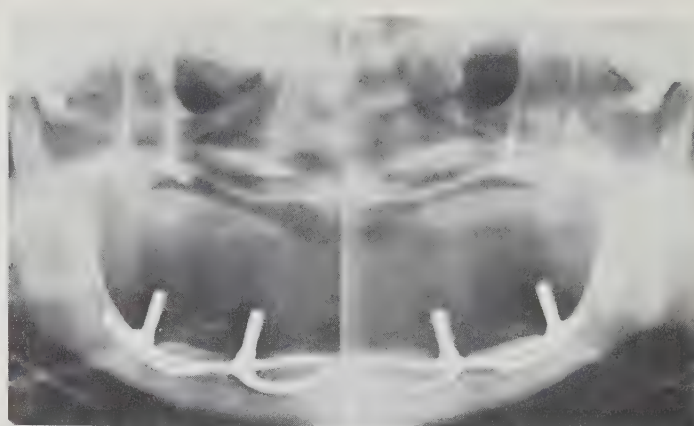


Fig. 1B

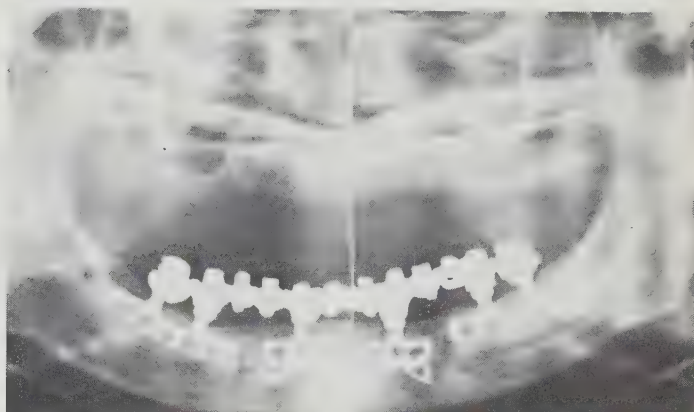


Fig. 1C

Fig. 1 A. Pin screw; B. Subperiosteal; C. Endosseous implant designs. All three types demonstrate bone changes which underscore the biomechanical compatibility of this type of metallic trans-epithelial implant method.

iological stress distribution, and (3) an attachment system which simulates the function of the periodontal ligament, may be met by using a cement which possesses the appropriate properties. The resulting stabilization would overcome some of the disadvantages of mechanical methods and there would be the additional advantage of immediate fixation. In the orthopaedic field, Charnley,³³ among others, has shown that acrylic cement can be used successfully to retain the mechanical stability of implanted femoral head prostheses over a period of years with little apparent sign of tissue reaction. Such satisfactory results may arise in part from the fact that acrylic cements have a modulus of elasticity intermediate between that of compact and cancellous bone. The success of the Charnley method in total hip replacement numbers several thousand cases over the past 10 years, and the technique has been accepted by many surgeons.³⁴ The acrylic cements have also exhibited good tissue acceptance in extensive use in cranioplasty and orbital reconstruction.³⁵⁻³⁷

Zarb et al³⁸ sought to create a "tension" system around the implant, rather than a "compression" one. In the human tooth, tension is created via the role of the periodont-



Fig. 2A

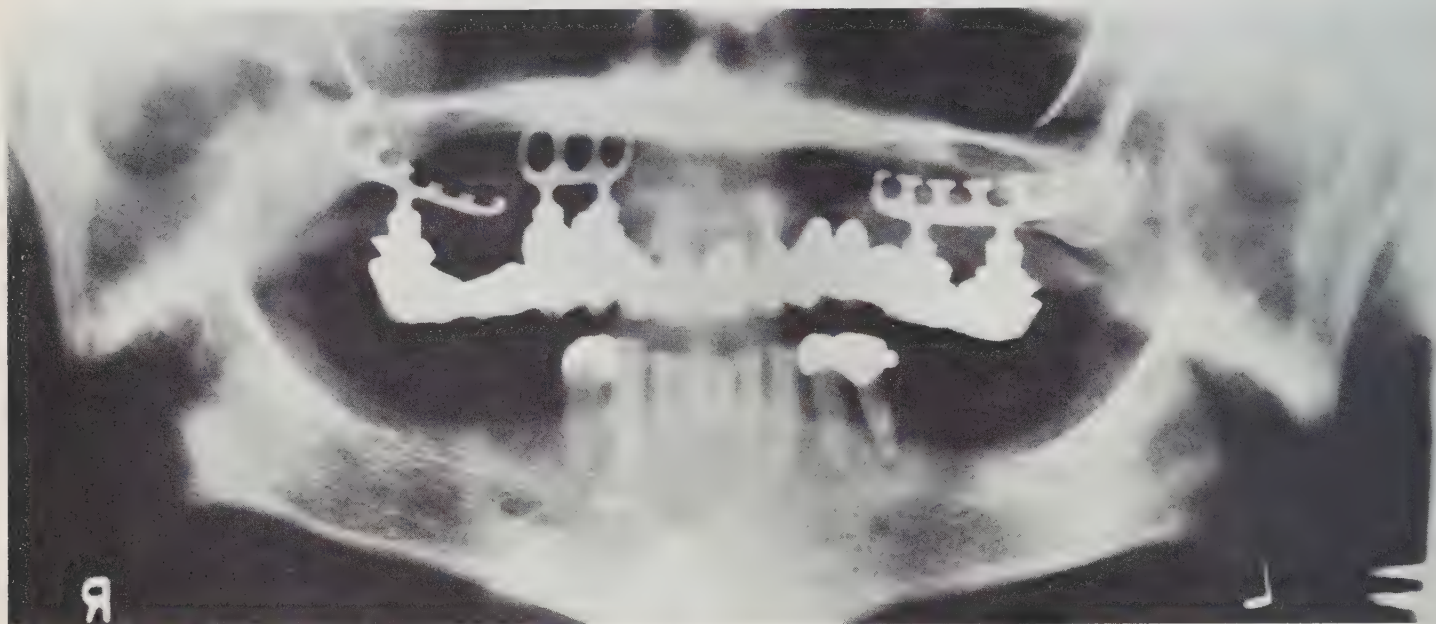


Fig. 2B



Fig. 2C

al ligament, and the investigators sought to simulate this role via the layer of polymethylmethacrylate. Their aim was to investigate the long-term clinical, radiographic and histological reaction of unloaded cemented and uncemented endosseous implants which penetrated the gingival mucosa of canine mandibles. This study demonstrated the ineffectiveness of the epithelial seal around the implant post, with subsequent bacterial invasion. In 1913, Jaquette³⁹ suggested that the major problem with dental implants would be in the region where the epithelium is penetrated. The investigations by Zarb et al³⁸ and by Johns⁴⁰ have shown nothing to alter this view.

BIOMATERIALS RESEARCH

In two excellent review papers, Smith⁴⁻⁴¹ commented on the paucity of attention given to the biomaterials aspect

Fig. 2 A. Intra oral; B. Panorex; C. Intra-oral radiographic views of maxillary endosseous implants. Deep pockets around the implants, coupled with a purulent discharge, pain and conspicuous radiolucent areas are evidence of the vulnerability of the endosseous implant technique.

of the problem. He identified two main points: (a) material properties per se, and stress distribution around the implant, together with (b) the precise interaction at a cellular level between the material and the surrounding tissue.

Currently, microporosity is considered to be a welcome alternative to surface irregularities of macroporations. The potential advantages of this approach include the increased area of mechanical interdigitation between implant and tissue and the probability of more rapid fixation. Both porous metal structures as well as several ceramic and carbon systems have been investigated with promising results.⁴² The stability of a dental implant would be opti-

mized if the implant properties were matched to the surrounding tissues, or some biologically acceptable method of stress distribution were developed. In this manner the transmission of load stress between the prosthesis and the supporting tissue would tend to occur uniformly and at correspondingly low values of average unit stress. Studies have shown that cyclical loading of bone leads to mechanical failure at stress levels which are considerably lower than its conventionally measured ultimate strength as a result of the fatigue phenomenon⁴³⁻⁴⁴.

These studies indicated that loads that induced any degree of unrecoverable strain would eventually lead to mechanical failure if they were repeatedly applied. Wolfson and associates⁴⁵ recently observed that dental implants are cyclically loaded and are mechanically interlocked to bone, hence the fatigue phenomenon could be a significant factor in their mechanical failure.

It must be emphasized that all dental implants are subjected to the cyclical loading of both functional and parafunctional tooth contacts and that the latter contacts are likely to be more frequent and more prolonged. The contribution of parafunction to prosthodontic problems is one of the most pervasive and least understood facets of clinical dentistry and is infrequently referred to in the prosthodontic literature.²

The tissue reaction to the material may be affected not only by mechanical discordance⁴¹ but also by its effect on cell metabolism and attachment. Cytotoxic constituents may be released through direct chemical action, extraction, or biodegradation of the material. Smith points out that these effects may be more subtle than previously realized and cites the work of Coleman, Herrington and Scales⁴⁶ who have shown that the elements of cobalt-chromium hip implants are disseminated throughout the body and that a relatively high concentration of titanium is found in the tissues around such implants. In both his reviews, Smith recognizes the fact that many questions are still unanswered, and underscores the vital need for long term data on the bio-materials aspect of oral implants.

CLINICAL AND HISTOPATHOLOGICAL STUDIES

The published clinical and histopathological studies are limited to numerous anecdotal reports and a relative dearth of well-documented longitudinal investigations⁴⁷. For example, the gingival picture has not been studied using standard gingival or periodontal indices to evaluate the gingival inflammation around the transcutaneous implant posts. Reports of standardized radiologic techniques are not available either. Such techniques could provide assessments and comparisons of the mineral content of the bone surrounding different implants. This seriously jeopardizes the interpretation of films, particularly as the

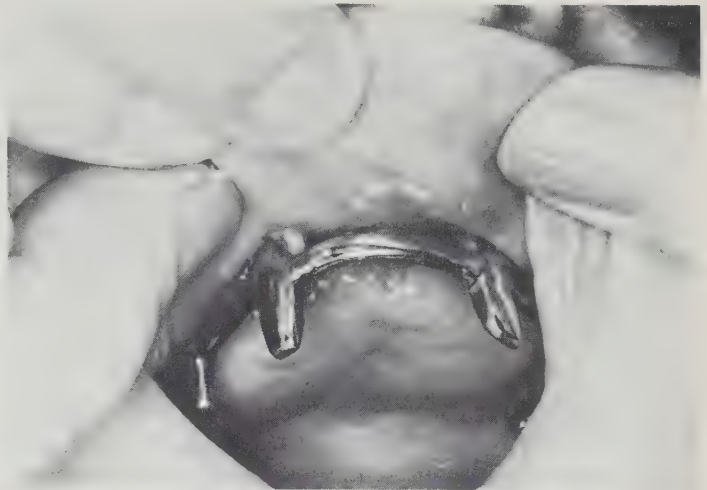


Fig. 3A



Fig. 3B

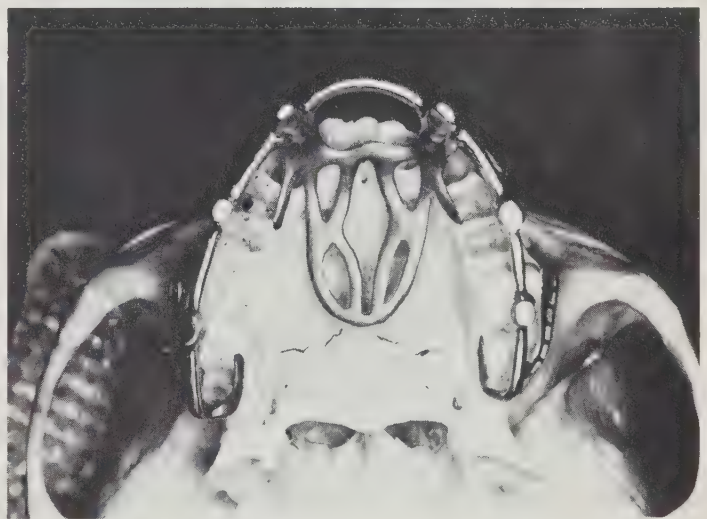


Fig. 3C

Fig. 3 A. The maxillary implant had also to be removed, and demonstrates the remarkable liberty taken by this patient's dentist in using a combined subperiosteal and endosseous design, as shown in B. C. The removed implants were placed on a dry skull to stimulate their relative position *in vivo*. The patients in these illustrations were referred to the Prosthodontic Department, University of Toronto, and to the Mount Sinai Hospital Dental Department, for "re-treatment".

SCIENTIFIC

bone and implants are not always clearly projected in the figures presented in the various reports.³¹

The methods of judging implant mobility have been crudely carried out by most authors without an objective numerical evaluation by the recording of linear or other parameters. The main criticism of the clinical reports lies in the small number of parameters studied, the arbitrary selection of analytical procedures and the virtual absence of longitudinal evaluation in experimental animals.⁴⁸ Recently, Cranin and associates⁴⁹ reported on a statistical evaluation of 952 endosteal implants in humans. Their cross-sectional review demonstrated that only endodontic endosteal implants met with long-range success. They observed that these implants are unique because they are not permucosal (transmucosal), thereby eliminating the otherwise inevitable vulnerability of the gingival cuff. Histopathologic evaluation has been limited⁵⁰ and has contributed little to the overall understanding of site healing.

Experiments in which hard or soft tissues biopsies from healing implant sites are studied periodically, indicate that the widespread practice of inserting endosseous implants does not appear to be founded on sound experimental evidence.⁵¹ Uhlig⁵² pointed out that chronic irritation, regardless of cause, affects the resting bony spongiosa in accordance with biological laws, with the formation of a granulation tissue to resorb and eliminate the foreign body. If the foreign body is indigestible and therefore not capable of being extruded, the granulation tissue acts as an isolating buffer for the spongiosa network, which takes no part in this reaction. In light of this observation, Uhlig concludes that all efforts to implant foreign bodies in the form of roots, screws or splints in the central portion of the alveolar process are meaningless and that such efforts are not only futile, but medically indefensible.

Animal experimentation still has not settled even the most basic questions such as the extent of epithelialization of semi-buried endosseous implants or their extra-site effects.

Full-arch subperiosteal mandibular implants are claimed to have withstood the test of time.⁵³ Bodine⁵³ states that implant dentures are significantly better for patients with resorbed ridges than for those with moderate ridges. He also states that since the deterioration surrounding the implant abutments is a slow one, many implant denture patients can use their prostheses for 15, 20 or more years.

While Bodine's and other reports suggest some credibility for the subperiosteal implant, one is still tempted to attribute its relative success to its slow failure. Also, the claim for comparison between site characteristics and normal periodontal structures has not been demonstrated in animal studies.⁵⁴ — All reports published to date indicate that metallic dental implants are surrounded by fi-

brous tissue which is probably a sign of micro-instability and therefore no guarantee against later loosening. However, Branemark and associates⁴⁸ published promising initial studies in which they demonstrated that intraosseous implants in the dog, in a two stage operative procedure, were well accepted for periods of more than five years. They report that bone appeared to come into intimate contact with the metal "without any shielding layer of buffer tissues at all." Brånemark reported that oral hygiene with control of gingivitis led to a cessation in the observed vertical bone resorption around the implant struts and that "the resorptive process tended to decrease in rate of progression, with a sort of equilibrium as a result, i.e. one fourth of the fixture in the bone was exposed, but was covered by granulation tissue."

My initial interpretation of the referred to studies plus my clinical examinations of implant patients had led me to conclude that implant placement is tantamount to the creation of an instant, advanced, periodontal-disease-like situation. However, the recent study of Brånemark and associates⁵⁵ suggests that the objective of osseointegration of the implant into the jaw bones is indeed feasible, as evidenced by this Swedish group's longitudinal results in humans over a 10 year period. Brånemark's conclusions were subjected to rigorous study by the Swedish Health Board which recommended that the Brånemark approach be applied in selected academic centres in Sweden for further longitudinal evaluation. This work will be followed with great interest by all prosthodontists and dentists who realize that several edentulous patients cannot be treated by conventional prosthetic methods only.

DISCUSSION

The concept of dental implantology is indeed an exciting one. However, the literature on oral implantology is dominated by anecdotal reports which have misled dentists into thinking that implantology is a clinical treatment method to be readily incorporated into their practices.

Insufficient data are available to enable the clinician to predict the number of years of success of any alloplastic oral implant.⁵⁹ There has been premature dissemination of alloplastic implant materials, methods and techniques without prior scientific animal and clinical research.⁵⁶⁻⁵⁷ There has been far too much testing of dental implants in humans and far too little evaluation of dental implant design and materials in laboratory animals.⁵⁸

Many clinical educators contend that the present state of dental implantology is one of human experimentation without informed consent. At no time in the history of surgical implants has there been such an unrealistic reporting of results as in the dental implant field and yet dentists all over the world still persist in their endeavours to restore

missing teeth with implants, frequently ignoring simpler, safer, and more predictable solutions for the prosthodontic problems confronting them.³

The point must also be made that there is a serious conflict of interest in the dental implant field in spite of the counter-claim that a "mutuality" rather than a conflict, exists.⁵⁹ There are a number of clinicians who are also producers and sellers of commercial devices. It is difficult for the practising dentist to know whether the aforementioned are speaking as clinical researchers or as company executives.⁵⁸ It must be admitted that current research does not justify the use of transcutaneous dental implants other than in exceptional circumstances.

In 1974, consultants to the American Dental Association⁶⁰ evaluated implants and considered them to be an experimental procedure. It is regrettable that the Canadian Dental Association has been silent on this matter.

It appears that dental implants are doomed to failure and they fail at varying rates. The exteriorization of some types of implants may be slower than that of others. Hence the suggestion that subperiosteal implants, because of their large area, "fail slowly", thereby sustaining the illusion that some implants are more successful than others. The use of such experimental techniques should be limited to those few situations in which the patient is aware of the experimental nature of the procedure and its short-lived potential. Obwegesser⁶¹ concluded that implants should be advocated only as long as they are intended for use for a limited time.

It must be emphasized that while a material per se may be well tolerated by the host tissues when totally embedded, this is not likely to be the case when the material traverses the mucoperiosteum to enter the oral environment. Johns⁴⁰ states that until a pseudo-cementum can be developed which could evoke the formation of a tissue analogous to Sharpey's fibres, neither a satisfactory pseudo-junctional epithelium nor a well contoured bone support around an abutment may be possible. Zander⁶² asks rhetorically "How could the tissue around a dental implant have more ability and chance of resisting the breakdown caused by the bacterial plaque than the periodontal tissue of the tooth that was replaced?"

The clinical practice of implantology does not appear to be widespread in Canada and there is an obvious limited acceptance of this technique by the profession. The teaching on implantology in Canadian dental schools has also been limited to a mere presentation of the scientific facts because the technique, as it exists today, is not founded on sound experimental evidence. We live in an era of clinical practice and teaching, which is noteworthy for the profession's awareness that the preservation of function is best served by the conservation and protection of tissues which remain.² It is a pity that this preventive prosthodontic ap-

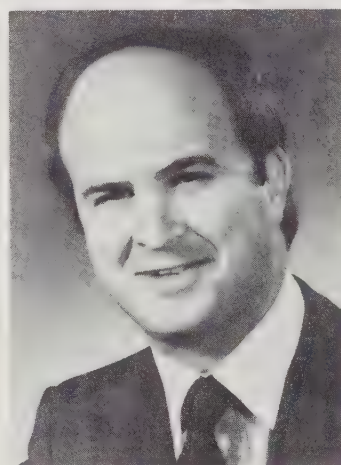
proach is usurped by the application of techniques of dubious and unproven biologic merit.

It is only Brånemark and associates' work⁵⁵ which suggests the possibility of a breakthrough in this field. Hansson⁶³ points out that in the osseointegrated oral implant situation there is no attachment apparatus coronally to the bone level. This means that probing of the implant crevice area will reveal the distance from the marginal bone to the margin of the mucous membrane. He argues that as a result "an implant pocket depth" in excess of 3 mm cannot per se be interpreted as a result of a pathological process. In other words, there is no claim of an epithelial seal, but simply one of osseointegration of the implant into its surrounding bone, which appears to be sufficient to ensure the long term viability of the Brånemark approach.

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Dr. George Zarb is professor and chairman, Department of Prosthodontics, Faculty of Dentistry, University of Toronto

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Psychothérapies des maladies psychosomatiques telle que la dysfonction temporo-mandibulaire douloureuse non-organique chez les adolescents

par Lise Morin

L'observation clinique d'adolescents souffrant du syndrome de la dysfonction temporo-mandibulaire douloureuse non-organique nous a amenés à nous interroger de façon particulière sur les facteurs psychologiques à la base de cette pathologie et sur les méthodes de traitement clinique à employer avec ce genre de patients. Cependant, peu d'études ont été entreprises dans ce domaine en raison de cette perception nouvelle de la dysfonction temporo-mandibulaire en tant que maladie psychosomatique, de l'intérêt récent pour les aspects psychologiques de somatisation chez l'enfant et l'adolescent et des difficultés rencontrées dans le traitement en général des maladies psychosomatiques chez l'adulte. Le but poursuivi dans ce travail est donc de tenter de définir la dysfonction temporo-mandibulaire en tant que maladie psychosomatique et de considérer les possibilités et les limites de traitement psychologique chez les adolescents atteints de cette pathologie.

Étant donné l'absence d'écrits portant sur les techniques thérapeutiques à utiliser avec les patients souffrant de ce syndrome, nous nous servirons des données émises sur le traitement clinique des malades psychosomatiques adultes et des aspects à considérer dans la thérapie chez les adolescents.

Étapes poursuivies dans cette étude

Dans le contexte de la psychologie clinique, nous tenterons de définir, dans une première partie, ce que les auteurs entendent par les maladies psychosomatiques. La première étape a pour but de tenter de situer le syndrome de la dysfonction temporo-mandibulaire non-organique à travers l'organisation psychosomatique. Dans cette perspective nous ferons un bref relevé des différentes recherches théoriques et expérimentales qui ont été effectuées sur ce sujet et des points de vue soulevés.

Par la suite, nous chercherons à mieux comprendre le point de vue psychodynamique de la dysfonction temporo-mandibulaire non-organique par l'exposé de l'étiopathogénie et des éléments psychodynamiques en cause. Cette seconde étape sera réalisée à l'aide des aspects traités dans la littérature en regard des maladies psychosomatiques et des explications psychologiques qui y ont été apportées.

La deuxième partie de ce travail portera plus spécifi-

quement sur le traitement psychologique appliqué aux maladies psychosomatiques en général et des considérations à apporter dans le cas du syndrome de la dysfonction temporo-mandibulaire douloureuse non-organique chez les adolescents. Dans un premier temps, nous distinguerons les buts et objectifs à rencontrer dans une première approche thérapeutique des sujets atteints de maladies psychosomatiques et ceux vers lesquels doit s'orienter le traitement dans une perspective à long terme. Sous cet angle, il sera aussi question des contre-indications mentionnées par plusieurs auteurs pour l'utilisation de certaines formes de psychothérapie.

Ces diverses considérations nous amèneront à étudier dans un deuxième temps, les formes de thérapie susceptibles de mieux répondre aux buts fixés dans le traitement psychologique des sujets atteints de maladies psychosomatiques. Dans ce sens, nous exposerons les quelques principes thérapeutiques rapportés dans la littérature par certains auteurs en ce qui concerne le traitement des sujets atteints du syndrome de la dysfonction temporo-mandibulaire douloureuse non-organique. A cet effet, nous nous intéresserons plus particulièrement aux méthodes de relaxation, en mettant l'accent sur le training autogène de Schultz en relation avec les autres techniques d'inspiration psychanalytique recommandées dans le traitement des adolescents atteints de maladies psychosomatiques.

En nous référant à une expérience de thérapie de groupe menée avec un groupe d'adolescents psychosomatiques et aux différents aspects traités au cours de cette étude, nous envisagerons, dans une dernière étape, les possibilités d'un plan de traitement clinique éventuel avec des adolescents atteints du syndrome de la dysfonction temporo-mandibulaire douloureuse non-organique. En conclusion, nous ferons un résumé des principaux points abordés dans ce travail et des différentes interrogations qu'elles ont pu susciter.

Historique des maladies psychosomatiques

“Mais tout ceci se peut rapporter à l'étroite couture de l'esprit et du corps s'entrecommuniquant leurs fortunes.”¹ Ainsi, si nous retraçons sommairement l'histoire de la médecine psychosomatique, nous constatons que dans l'Antiquité, les protomédecines et les médecines reconnaissent l'influence du psychisme sur le corps

c'est-à-dire que les sentiments et les émotions ont un retentissement sur le corps. À cette époque les maladies sont considérées comme la conséquence du péché et le malade est puni parce qu'il a transgressé la loi divine: un démon l'habite qu'on peut exorciser comme un microbe. Par conséquent, tout en étant liée à la vie morale, la maladie demeure étrangère à la personnalité. Hippocrate, le premier, affirme que le malade importe plus que la maladie considérée comme une modalité réactionnelle de l'individu devant la cause morbide. Sous cet angle, l'homme est considéré comme une unité psychosomatique dessinant sa manière d'être à l'égard du milieu.

En 1818, Heinroth² utilise pour la première fois le terme psychosomatique. Cependant jusqu'à l'époque moderne, existent deux courants de pensée accordant la primauté soit au malade ou à la maladie. Ainsi les découvertes de l'âge scientifique favorisent l'émancipation de la maladie par rapport à la personnalité du malade. Mais un double mouvement, neurophysiologique et psychologique, vient restituer à l'individu sa place dans le tableau clinique. D'une part, les travaux de Pavlov (1902) et Cannon, et al³ viennent mettre en évidence l'interaction entre le système nerveux central et la vie de l'organisme. D'autre part, les travaux de Freud⁴ sur l'hystérie font surgir un mouvement de pensée qui prendra place un demi-siècle plus tard.

En effet, à la seconde guerre mondiale, deux chercheurs, Weiss et English³ proposent trois schémas d'évolution d'idée. Ainsi, au XIX^e siècle on proposait: maladie cellulaire → altération de structure → trouble physiologique; au XX^e siècle, on a ajouté: trouble fonctionnel → maladie cellulaire → altération de structure; enfin la *maladie psychosomatique* apporte un nouveau schéma: trouble psychologique → trouble fonctionnel → maladie cellulaire → altération de structure.⁵ Dans ce sens, des équipes de chercheurs en France, De Marty, De M'Uzan et David⁶, Fain Kreisler et Soulé⁷ et en Grande-Bretagne Balint⁸ s'intéresseront plus particulièrement à l'investigation psychosomatique du malade par l'exploration du conflit psychique s'exprimant à travers des manifestations somatiques.

Étant donné l'intérêt nouveau et croissant des études et recherches contemporaines dans ce domaine, il serait important de considérer maintenant de quelle façon ces auteurs tentent de définir le champ des maladies psychosomatiques. Il est à remarquer qu'en raison de la variété des conceptions à ce sujet, nous nous limiterons à présenter les points de vue cliniques récents sur les maladies psychosomatiques.

Essai de définition des maladies psychosomatiques

Selon Von Vexküll⁹, la médecine psychosomatique se définirait comme une branche de la médecine qui concerne l'étude des phénomènes de l'esprit et leur signification dans l'apparition et le développement des mala-

dies affectant le corps. De son côté, Parot³ fait une distinction entre: premièrement, la signification au *sens large* du terme psychosomatique qui correspondrait à une attitude et à une méthode d'aborder les problèmes de l'homme malade en se référant à leurs aspects biologiques et psychologiques et deuxièmement, la signification au *sens restreint* de la médecine psychosomatique comme un secteur de la pathologie générale qui regrouperait des affections somatiques considérées comme secondaires à des facteurs émotionnels, passés ou présents.

«... les hypothèses émises ... mettent en évidence l'importance de considérer les facteurs psychologiques dans l'étiologie du syndrome de la dysfonction temporo- mandibulaire non- organique...»

Pour sa part, Lafon¹⁰ décrit trois aspects de la psychosomatique: premièrement, l'attitude psychosomatique qui nous conduit à la conception de la médecine touchant à la totalité de la personne, deuxièmement, la symptomatologie psychosomatique dans son aspect fonctionnel transitoire par répercussion neuro-végétative et expression somatique subjective ou objective mineure et, troisièmement, les affections psychosomatiques qui conduiraient à un véritable habitus pathologique de longue durée ou d'ordre cyclique important comme l'asthme, l'hypertension artérielle, l'ulcère gastrique; les névroses d'organes allant jusqu'à la lésion de l'organe ou la fragilisation de l'organe à une autre atteinte pathologique. Sous cette forme, le syndrome psychosomatique prendrait une allure essentiellement viscérale (asthme, allergies, tuberculose pulmonaire, hypertension artérielle, céphalées, migraines, dysfonction temporo-mandibulaire douloureuse non-organique) et les névroses de conversion ou hystérie sous forme de crise, de troubles moteurs, sensitifs ou sensoriels, le plus souvent à caractère de dissolution fonctionnelle uniforme ou localisée. À ce sujet, Becache² met en évidence la difficulté de cerner le champ psychosomatique et de délimiter les frontières entre les maladies psychosomatiques et les autres maladies en raison de la variabilité et du degré d'importance des facteurs psychologiques et étiologiques qui y sont impliqués.

Selon De Marty⁶ pour pouvoir dire qu'une maladie est psychosomatique, il faut faire ressortir l'existence d'un conflit chez l'individu d'abord avec le monde extérieur, puis intra-psychique. Ce point de vue sera d'avantage approfondi lorsque nous aborderons les mécanismes psychodynamiques qui contribuent à la formation

du symptôme psychosomatique en se basant sur les aspects théoriques tels que décrits par De M'Uzan¹¹.

À partir de cette approche globale des maladies psychosomatiques en général, nous centrerons maintenant notre intérêt sur la dysfonction temporo-mandibulaire en tant que maladie psychosomatique.

Symptômes physiques associés à la dysfonction temporo-mandibulaire

Selon Muler, Cotin et Roulleau¹², la symptomatologie fonctionnelle de l'articulation temporo-mandibulaire se caractériserait par: premièrement des troubles articulaires dont: a) les *craquements* survenant pour tous les mouvements ou un mouvement déterminé de la mandibule b) des *douleurs articulaires*, habituellement sourdes, modérées lors de la mastication d'aliments durs, plus marquées le matin au réveil et s'estompant au cours de la journée c) des *troubles de la mobilité mandibulaire* comportant une limitation de l'ouverture buccale d'installation progressive se produisant lors de la préhension d'aliments volumineux; et, deuxièmement, des symptômes extra-articulaires comme: â) des *algies faciales*¹³ unilatérales débutant dans la région condylienne et s'étendant vers la région temporale, l'occiput, le cou, les dents, le front, le nez et le semis maxillaire b) des *troubles auriculaires* (troubles de l'oreille) tels que des otalgies (maux d'oreille), des bourdonnements (tintements, sifflements, de ton grave ou en sourdine, plus particulièrement le matin), baisse d'audition (sensation d'oreille bouchée ou voilée au moment des repos), hypoacousie de transmission (diminution de l'acuité auditive) pour les tonalités graves à l'examen audiométrique et c) des *signes salivaires plus rares* manifestés par des douleurs dans les régions parotidiennes ou sous-maxillaires sans gonflement des glandes salivaires, d'une sialorrhée (sécrétion de salive exagérée) ou d'une asialie (absence de salive).

D'après Lupton¹⁴, les patients souffrant de dysfonction temporo-mandibulaire présenteraient une tension musculaire localisée au niveau des muscles de l'articulation du joint temporo-mandibulaire provoquant ainsi des douleurs dans cette région qui s'irradierait le long du cou, des épaules, de la tête et des oreilles. Selon Lefer¹⁵, cette pathologie se caractériserait surtout par les symptômes de bruxisme (grincer des dents), une limitation de l'ouverture de la mandibule inférieure ce qui, par conséquent, amènerait des troubles au niveau de la mastication et de la dentition.

En se servant de leurs observations cliniques auprès de la population adulte, plusieurs auteurs ont tenté d'expliquer d'un point de vue psychologique les facteurs à la base de cette tension musculaire. À cet effet, par une brève revue de la littérature sur ce sujet, nous exposerons donc dans le prochain point les explications psychologiques apportées par les chercheurs sur l'existence de la dysfonction temporo-mandibulaire en tant que maladie psychosomatique.

Point de vue psychosomatique de la dysfonction temporo-mandibulaire

Dans le domaine clinique, plusieurs disciplines dont surtout l'oto-rhino-laryngologie se sont intéressées de façon particulière au phénomène de la dysfonction temporo-mandibulaire. Leur but était de chercher à découvrir les causes à la base de cette tension musculaire localisée principalement au niveau de l'articulation temporo-mandibulaire. En raison de la diversité des opinions émises à ce sujet, il nous apparaît difficile de définir un seul modèle d'explications psychologiques de cette symptomatologie. Néanmoins en parcourant la littérature, plusieurs auteurs (Moulton¹⁶, Saper¹⁷, Thompson¹⁸, Coplant¹⁹, Kraus²⁰, Goldstein²¹ et Franks²², appuient l'hypothèse de Schwartz²³ sur l'existence d'une tension psychologique comme cause essentielle de cette tension musculaire au niveau de l'articulation temporo-mandibulaire.

Par ailleurs, à l'aide d'observations psychiatriques, de tests de personnalité (Minnesota Multiphasis Personality Inventory (M.M.P.I.) et Thematic Aperception Test (T.A.T.)) et d'autoestimation, un second groupe de chercheurs (McCall et Smyd²⁴, Lefer²⁵, Lupton²⁶, Yemm²⁷, Fine²⁸ et Rothwell²⁹, relèvent des traits significatifs de ressemblance entre le profil de personnalité des sujets atteints de dysfonction temporo-mandibulaire non-organique et les malades psychosomatiques. D'après les résultats obtenus, ces patients manifesteraient en général des besoins marqués et inconscients de dépendance, de submissivité, d'agressivité ou de dépression.

Malgré l'absence de recherches expérimentales et cliniques pour vérifier ces différentes données, les hypothèses émises par ces deux groupes de chercheurs mettent en évidence l'importance de considérer les facteurs psychologiques dans l'étiologie du syndrome de la dysfonction temporo-mandibulaire non-organique et de définir les aspects dynamiques de cette pathologie à l'intérieur du champ des maladies psychosomatiques.

Dans cette perspective, nous aborderons le point de vue psychodynamique des maladies psychosomatiques selon les explications psychologiques énoncées dans la littérature et que nous utiliserons pour mieux comprendre l'étiopathogénie de la dysfonction temporo-mandibulaire douloureuse non-organique et les éléments psychodynamiques qui y sont en cause. Ceci nous éclairera davantage sur la partie essentielle de ce travail concernant principalement les buts thérapeutiques poursuivis avec cette catégorie de patients et les formes de thérapies utilisées. En raison du peu d'études effectuées de façon spécifique sur la nature de l'organisation psychodynamique des sujets adolescents atteints de ce syndrome nous rapporterons les considérations générales des différents auteurs qui ont dégagé leurs conclusions auprès de populations adultes.

ASPECTS DYNAMIQUES DES MALADIES PSYCHOSOMATIQUES ET DE LA DYSFONCTION TEMPORO-MANDIBULAIRE

Dans l'optique où nous considérons maintenant la dysfonction temporo-mandibulaire en tant que maladie psychosomatique, nous retraçons dans cette seconde partie les différents points de vue des auteurs sur l'étiologie des maladies psychosomatiques en général. Ceci nous amènera à nous centrer plus spécifiquement sur les facteurs psychologiques à l'origine de la dysfonction temporo-mandibulaire.

Etiologie des maladies psychosomatiques telle que la dysfonction temporo-mandibulaire

Selon Becache², à l'origine il existerait un stress c'est-à-dire une contrainte ou agression provenant du milieu extérieur qui déclencherait chez le sujet une réaction de tension dont la signification serait en relation avec l'histoire et le développement psychologique du sujet.

D'après Alexander³⁰, le désordre psychosomatique apparaîtrait lorsque les affects et les émotions ne pourraient plus s'exprimer normalement et que l'énergie resterait enfermée dans l'organisme de façon chronique entraînant un dysfonctionnement des organes. Ainsi si l'expression motrice ou verbale de l'agressivité ou de l'anxiété est bloquée, les décharges du système nerveux central seraient détournées vers le système végétatif amenant ainsi des désordres pathologiques dans le fonctionnement des organes. D'après Grinker et Robbins³¹, il y aurait une multitude de facteurs dûs à l'hérédité, la constitution et l'environnement de l'individu qui entreraient en jeu dans les processus psychosomatiques et non pas une cause unique.

Pas ailleurs, Adamson et Schmale³² postulent que le déclenchement d'une maladie psychosomatique serait lié à la perte réelle symbolique ou anticipée d'un objet. Ce point de vue sera appuyé par Wolf³³. Ainsi, à la suite de cette perte, le sujet développerait des sentiments de désespoir et d'impuissance et ne combattrait plus. Ceci amène donc plusieurs chercheurs à prendre en considération l'environnement de l'individu qui devient malade.

De son côté, Sperling³⁴ considère que la relation de dépendance mutuelle et de contrôle existant entre la mère et l'enfant serait un facteur important dans la prédisposition au développement d'un désordre psychosomatique. De plus, selon Wenar³⁵ cette relation mère-enfant serait hautement chargée de sentiments négatifs (hostilité inconsciente, déguisée sous une attitude d'anxiété manifeste, rejet conscient ou non de l'enfant) et non-gratifiante (attitude négative face aux soins à apporter à l'enfant) à la fois pour la mère et pour l'enfant.

Ces auteurs, dont nous venons de mentionner les recherches, se sont intéressés aux mères d'enfants ayant des désordres psychosomatiques en général. Dans la même perspective, plusieurs chercheurs tentent à l'heure

actuelle de vérifier cliniquement l'hypothèse d'une relation mère-enfant conflictuelle et insatisfaisante comme facteur déterminant dans l'étiologie des maladies psychosomatiques.

D'autre part, en ce qui concerne l'étiologie du syndrome de la dysfonction temporo-mandibulaire douloureuse non-organique, peu d'auteurs se sont penchés sur les facteurs psychologiques à la base de ce syndrome. Il est à souligner que la considération de la dysfonction temporo-mandibulaire en tant que maladie psychosomatique est nouvelle dans le domaine de la science, ce qui justifie l'existence d'un plus grand nombre d'articles portant sur des explications physiologiques plutôt que psychologiques de la maladie.

Néanmoins, récemment, le psychiatre, Lefer¹⁵ a tenté de définir les aspects psychologiques à la base de cette pathologie. Selon lui, chez les sujets atteints de dysfonction temporo-mandibulaire douloureuse non-organique, l'étiologie des symptômes s'expliquerait par une position de subordination que ces sujets prendraient dans leurs relations avec une figure d'autorité, traités comme des enfants faibles, impuissants, passifs et dépendants. D'après Lefer¹⁵, ceci serait en rapport avec la relation qu'ils auraient eu avec des figures maternelles et qu'ils continueraient à perpétuer dans leurs relations avec les autres.

Cette hypothèse énoncée par Lefer¹⁵ suggère l'importance de la nature de la relation mère-enfant comme explication psychologique possible du syndrome de la dysfonction temporo-mandibulaire douloureuse non-organique. Ainsi il rejoint l'hypothèse des interactions conflictuelles entre mère et enfant comme schéma d'explication possible des maladies psychosomatiques. Toutefois, il est à souligner que cette position théorique de Lefer¹⁵ n'a pas été vérifiée expérimentalement auprès des mères d'enfants souffrant de dysfonction temporo-mandibulaire. De plus, ceci n'a jamais été abordé par d'autres auteurs étudiant ce domaine puisqu'aucune investigation n'a été effectuée auprès des enfants atteints de ce syndrome. Quoiqu'il en soit, ceci demeure donc un postulat sur lequel il serait intéressant d'entreprendre des futures recherches cliniques afin d'élargir le champ d'étude à la population des enfants et des adolescents et de pouvoir en définir scientifiquement les différentes composantes étiologiques.

Point de vue psychodynamique des maladies psychosomatiques

Dans cette section, nous exposerons dans un premier temps, les aspects psychodynamiques énoncés par De M'Uzan¹¹ dans la formation des symptômes psychosomatiques. Par la suite, nous reconsidérerons ces divers éléments en nous référant aux niveaux génétique, structural, économique et adaptatif du modèle psychosomatique.

En raison de l'impossibilité de définir strictement le

profil psychologique de telle maladie psychosomatique, De M'Uzan¹¹ considère les principaux mécanismes psychodynamiques en cause dans la formation des symptômes psychosomatiques en général. Selon lui, le fonctionnement mental du patient psychosomatique présenterait des caractéristiques originales qui permettraient de distinguer une structure différente de celle que l'on retrouve chez le patient souffrant d'une névrose ("neurotic patient"). Ces caractéristiques seraient premièrement, une pensée opératoire (qui réfère exclusivement au présent), elle transpose et illustre l'action concomitante sans jamais vraiment la signifier. Elle n'a pas de relation appréciable avec les fantasmes inconscients. Deuxièmement, il existerait chez ces sujets une inhibition représentative de base: soit qu'il y ait absence totale de fantaisies ou de rêves, du moins sous une forme accessible, soit qu'ils soient réduits à la simple reproduction des objets et des situations perçues. Cela peut aussi impliquer la forme brutale et non-élaborée des rêves et des fantasmes: c'est-à-dire l'intervention soudaine des processus primaires où les mécanismes de déplacement et de condensation seraient à leur état le plus rudimentaire. Troisièmement, se manifesterait la reduplication: ceci concernerait la perception des autres qui serait profondément marquée par une sorte de traduction globale d'une image sommaire de soi, dépouillée de tout trait vraiment personnel et indéfiniment reproduite conformément à une forme stéréotypée. Ce dernier aspect serait lié à une incapacité de faire des projections et des introjections nuancées, particulièrement en ce qui concerne les discriminations affectives qui les accompagnent.

D'autre part, De M'Uzan¹¹ souligne que le symptôme psychosomatique n'est pas l'expression d'un fantasme mais plutôt la conséquence d'une incapacité, plus ou moins marquée d'élaborer des conflits à un niveau mental. Par ailleurs, l'apparition d'une activité fantasmatique considérable chez un patient psychosomatique serait l'indice d'un processus de rétablissement (recovery).

D'un point de vue génétique, Spitz³⁶, De Marty⁶, De M'Uzan¹¹ et David⁶ rapportent l'existence d'une carence de relation objectale et de frustrations précoces au stage des satisfactions sensori-motrices passives narcissiques indispensables au développement psychologique normal de l'enfant. Ainsi du point de vue structural, comme De M'Uzan¹¹, Becache² situe l'organisation de la personnalité psychosomatique à un niveau plus archaïque que celui des symptômes névrotiques, la vie mentale, intellectuelle, onirique et fantasmatique serait réduite à un rôle pragmatique et instrumental.

D'un point de vue économique, leur énergie psychique échapperait aux manipulations mentales d'élaboration et d'intégration en perturbant telle ou telle autre organisation fonctionnelle. Du point de vue adaptatif, les sujets atteints de maladies psychosomatiques, pour lutter contre leur pulsions agressives et libidinales édifieraient un système manquant de souplesse et d'adaptabilité.

Apparemment bien adaptés socialement, ils ne laisseraient filtrer aucune manifestation affective et leur froid empêche l'émergence de tout désir ou représentation tel que le besoin de dépendance et d'expression intense d'agressivité. Il apparaîtrait donc nivelé, rigide, conformiste, dans un monde sans attrait et sans horizon avec une pauvreté de vie fantasmatique et relationnelle. Comme le dit Marie-Claire Célérier³⁷, lorsque les mécanismes de défense sont débordés, le conflit s'inscrit dans le corps sans effleurer la conscience.

Selon Lefer²⁵, chez les sujets atteints de dysfonction temporo-mandibulaire, les symptômes localisés principalement au niveau de la mandibule servirait "d'auto-hypnose" pour fuir les problèmes insurmontables de la vie et ils auraient la signification d'une défense contre l'anxiété. De cette façon ils maintiendraient leur besoin de dépendance, d'agressivité et de dépression hors de la conscience.

Ainsi, comme pour les malades psychosomatiques, les symptômes physiques des sujets atteints de dysfonction temporo-mandibulaire seraient déconnectés de leur signification psychologique. D'après Lefer²⁵ ceci se manifesterait par un niveau de fonctionnement au niveau de la pensée opératoire, par de pauvres limites de l'égo et par une fuite devant toute menace d'irruption au niveau de la conscience des pulsions agressives et des affects au moyen de la somatisation. Le sujet psychosomatique en général utiliserait donc son symptôme pour regagner la sécurité et faire baisser l'anxiété.

Somatisation et choix de l'organe

Sous ce thème, nous tenterons de préciser à l'aide de différentes positions théoriques, les aspects les plus susceptibles de déterminer que tel organe sera affecté ou dysfonctionnel plutôt que tel autre.

D'après Porot³, le choix de l'organe dépendrait de la constitution individuelle (équipement neurovégétatif) et des fragilisations accidentelles ou génétiques à l'occasion de prédispositions locales, l'organisme entier pourrait alors se comporter comme organe récepteur.

De son côté, Ajuriaguerra³⁸ considère trois positions en relation avec le choix de l'organe chez l'enfant: a) certains affirment que le choix de l'organe est en rapport avec son insuffisance congénitale même si la qualité des relations précoces entre nourrisson et mère joue un rôle important et indiscutable; b) d'autres soulignent que le type d'organisation mère-enfant orienterait le choix du canal et si certains besoins sont gratifiés à travers un de ces systèmes, certains types de frustrations feront que toutes les émotions s'engageront dans un système physiologique particulier; c) comme dernière position, il semblerait que le choix de l'organe chez un enfant en évolution dépendrait des caractéristiques particulières de son fonctionnement à un moment donné de son évolution et des caractères symboliques que cet organe pourrait prendre au cours de cette évolution. D'où l'apparition d'une symptomatologie psychosomatique

ne dépendrait pas uniquement du désordre conflictuel mais devrait être mis en relation avec la maturation du fonctionnement des organes et avec les caractéristiques du développement psychologique.

Dans ce sens, Ajuriaguerra³⁸ mentionne que la valorisation d'un système ne dépendrait pas uniquement (et peut même ne pas dépendre du tout) d'un état de moindre résistance particulier de ce système: elle dépendrait des mécanismes qui, suivant l'âge, faciliteraient l'expression par un canal donné, elle dépendrait de ce que ce canal représenterait au cours de l'évolution d'un point de vue symbolique, elle dépendrait de ce que l'on obtient d'autrui quand on l'utilise c'est-à-dire ce que l'enfant éprouve quand il utilise ce canal, comment il projette vers l'extérieur et comment la mère reçoit ou impose le choix de ce canal et leurs réactions mutuelles au cours de son actualisation.

À ce sujet, Becache² souligne que chez l'enfant, la resomatisation à des moments donnés de son enfance fait partie de son développement normal alors que chez l'adulte elle est pathologique car elle implique un fonctionnement au niveau de la pensée opératoire avec l'absence de vie fantasmatique pour fuir le conflit actuel.

Dans le cas des sujets atteints de dysfonction temporo-mandibulaire douloureuse non-organique, il semblerait, selon Moulton¹⁶, que la bouche donnerait lieu à un symbolisme particulier. En effet, l'utilisation des expressions: "il grince des dents en rage", "il dresse sa mâchoire avec détermination" démontre l'importance accordée à la bouche comme organe d'expression de la rage, de la colère et de la détermination mais aussi pour exprimer des émotions de tendresse et de désirs sexuels.

D'après Moulton¹⁶ durant l'enfance la bouche serait utilisée comme une source de plaisir sensoriel (sucrer, manger, embrasser) et aussi comme une arme de défense comme mordre, argumenter ou attaquer avec des mots. Dans ce sens, l'occlusion des dents pourrait être affectée dans un chemin parallèle avec deux directions contraires: la bouche servant à exprimer des émotions, l'occlusion des dents pourrait être altérée en raison d'une sous-utilisation ou d'une sur-utilisation.

Dans le premier cas, la sous-utilisation serait l'expression d'une attitude passive produisant un usage inadéquat des muscles mandibulaires; dans le second cas, la sur-utilisation proviendrait d'habitude de bruxisme (grincement de dents) qui serait l'expression d'une tension réelle d'hostilité provoquée par la difficulté du sujet à exprimer la rage, la colère et d'un effort excessif en vue de la retenir. Ce phénomène amènerait une contraction prolongée et non-physiologique des muscles de la mâchoire et pourrait être le déterminant de deux syndromes particuliers: soit 1) une névralgie primaire faciale atypique et 2) le syndrome de la dysfonction temporo-mandibulaire douloureuse non-organique que nous étudions présentement. D'après ses études expérimentales et cliniques, Moulton¹⁶ constate que cette colère et cette rage se produirait à la suite de la perte

physique ou psychologique d'un objet de dépendance (p. ex.: mort d'un parent avec lequel le sujet était très dépendant).

Ces considérations de Moulton¹⁶ ont été reprises et appuyées par Lefer²⁵ dans son article "*Psychic Stress and the Oral Gavity*" où il met en évidence la présence de traits dépressifs chez les gens atteints du syndrome de dysfonction temporo-mandibulaire douloureuse non-organique et qui proviendrait d'une relation primaire insatisfaisante avec le premier objet d'amour (en l'occurrence la mère) comme pourvoyeur des gratifications orales. Par conséquent, l'enfant réagirait par de la passivité et de l'hostilité devant toute frustration venant de l'extérieur. Selon Lefer²⁵ la formation du symptôme proviendrait ainsi l'apparition d'une dépression psychotique.

Comme nous avons pu le constater dans cette première partie, il s'avère difficile de définir de façon précise un modèle psychodynamique propre aux maladies psychosomatiques en raison de cette nouvelle perspective d'approche de la maladie, de la diversité des points de vue émis par différents auteurs sur ce sujet et des nombreuses recherches expérimentales et cliniques à effectuer dans ce domaine. Par conséquent, ceci explique la pauvreté des études en psychologie sur le syndrome de la dysfonction temporo-mandibulaire douloureuse non-organique étant donné la perception nouvelle de cette pathologie en tant que maladie psychosomatique. Il apparaît donc essentiel d'expérimenter, de façon scientifique, avec des échantillons d'enfants et d'adolescents atteints de ce syndrome pour vérifier les hypothèses émises à ce sujet.

Quoiqu'il en soit, à partir des éléments diagnostiques recueillis sur les structures de personnalité de population d'adultes affectés de maladies psychosomatiques, plusieurs praticiens ont élaboré des plans de traitement en vue de soulager la souffrance physique et psychologique de ces malades. Cependant, comme nous l'avons souligné auparavant, peu de chercheurs se sont intéressés particulièrement au traitement psychologique du syndrome de la dysfonction temporo-mandibulaire douloureuse et aucune recherche n'a été entreprise auprès des adolescents présentant ce type de maladie psychosomatique. Par conséquent, la seconde partie de ce travail portera donc sur les buts et objectifs poursuivis dans le traitement psychologique des maladies psychosomatiques en général et des techniques plus spécifiquement utilisées à cet effet.

De même, à l'aide des données cliniques apportées par quelques auteurs sur le syndrome de la dysfonction temporo-mandibulaire douloureuse et des éléments à considérer dans l'emploi de techniques thérapeutiques auprès des adolescents, nous tenterons d'exposer, à la fin de ce travail, une ébauche des possibilités et des limites d'un plan de traitement psychologique chez des adolescents souffrant du syndrome de la dysfonction temporo-mandibulaire non-organique.

Première de trois parties

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Lise Morin était une étudiante à l'Université de Montréal.

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New 5th Edition. **PERIODONTICS: In the Tradition of Orban and Gottlieb.** By Daniel A. Grant, D.D.S.; Irving B. Stern, D.D.S.; and Frank G. Everett, D.M.D., M.D., M.S.; with 26 contributors. Thoroughly updated and reorganized, this new 5th edition integrates basic science with clinical application. You'll be able to review basic anatomy of periodontal disease while detailed discussions offer the latest information on: gingivitis, periodontitis, periodontosis, pericoronitis, abscesses, cysts, recession and atrophy. This widely adopted text belongs in your personal reference library. Why not reserve a copy today? June, 1979. Approx. 920 pp., 1,382 illus. and 6 color plates. **About \$36.00.**

New 6th Edition. **PERIODONTAL THERAPY.** By Henry M. Goldman, D.M.D., F.A.C.D., F.I.C.D.; and D. Walter Cohen, D.D.S., F.A.C.D.; with 34 contributors. Share the expertise of the eminent authors who have contributed to this new, extensively illustrated 6th edition while you review the anatomy and physiology of periodontal tissues and the basic science of periodontal disease. Specific diseases are discussed along with specific treatments — initial preparation, scaling, root planing, and oral physiotherapy. Benefit from discussions of periodontal surgery: wound healing, curettage, gingivectomy, mucogingival surgery, bone defect surgery and special problems. July, 1979. 1,088 pp., 3,283 illus. and 2 color plates. **About \$46.25.**

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neurological injuries (including skull fractures and spinal cord injuries). July, 1979. Approx. 320 pp., 274 illus. **About \$46.25.**



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A New Book. **TOOTH MOVEMENT WITH REMOVABLE APPLIANCES.** By J. D. Muir, B.D.S., U.Birm., L.D.S., D. Orth., F.D.S., R.C.S.Eng. and R. T. Reed, B.D.S., U.Glas., D.Orth., R.C.S.Eng., F.D.S., F.C.P.S.Glas. Better understand tooth movement and various appliances with the help of this new reference. You'll get detailed descriptions of the design and clinical handling of removable appliances and their application to specific tooth movements. Sections discuss: progress assessment, adult treatment, extra-oral traction, lower arch treatment plus various common problems you encounter every day. Generous use of line drawings illustrates procedures and various appliances discussed. February, 1979. Approx. 180 pp. **About \$31.50.**

ALSO OF INTEREST:

A New Book. **APPLIED PRACTICE MANAGEMENT A Strategy for Stress Control.** By Thomas M. Cooper, B.S., D.D.S. and John A. DiBiaggio, A.B., D.D.S., M.A. September, 1979. Approx. 250 pp., 180 illus. **About \$27.75.**

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ANNOUNCEMENTS

We urge readers to confirm meeting dates with the contact listed with each announcement.

CANADIAN DENTAL ASSOCIATION, 1979 National Convention, Quebec City, September 9-12. Contact: Dr. Clément Caron, Convention Chairman, 1979 CDA National Convention, 1575 St. Louis Road, Sillery, Quebec G1S 1G4. Telephone: (418) 527-8969 or 687-5271.

ASSOCIATION DENTAIRE CANADIENNE, Congrès national 1979, Québec, 9-12 septembre. Pour renseignements: Dr. Clément Caron, directeur général, congrès 1979 de l'ADC, 1575 chemin St-Louis, Sillery, Québec G1S 1G4. Téléphone: (418) 527-8969 ou 687-5271.

CANADIAN MEETINGS

JUNE

Annual Meeting of the **NOVA SCOTIA DENTAL ASSOCIATION**, Digby Pines, Nova Scotia, June 1-2, 1979. Contact: J.S. Christie, president, Nova Scotia Dental Association, P.O. Box 604, Halifax, Nova Scotia B3J 2R7.

BRITISH COLUMBIA COLLEGE OF DENTAL SURGEONS 1979 CONVENTION, Hotel Vancouver, June 5-8, 1979. Contact: College of Dental Surgeons of British Columbia, 1125 West Eighth Avenue, Vancouver, British Columbia V6H 3N4.

WESTERN CANADA DENTAL SOCIETY CONVENTION, Hotel Saskatchewan, Regina, June 7-9, 1979. Contact: Dr. T.E. Donavon, 205 McCallum Hill Building, Regina, Saskatchewan S4P 2G6.

ALBERTA DENTAL ASSOCIATION, ANNUAL CONVENTION, Red Deer, Alberta, June 7-9, 1979. Contact: Dr. Ron Gish, Lacombe, Alberta T0C 1S0.

ASSOCIATION OF CANADIAN FACULTIES OF DENTISTRY/ ASSOCIATION DES FACULTÉS

DENTAIRES DU CANADA, ANNUAL MEETING, Saskatoon, June 17-22, 1979. Contact: Dr. G.W. Myers, 5059 Dental Pharmacy Building, University of Alberta, Edmonton, Alberta T6G 2H7.

JULY

7TH INTERNATIONAL SYMPOSIUM ON DENTAL HYGIENE, Vancouver, British Columbia, July 25-28, 1979. Contact: 7th International Symposium on Dental Hygiene, c/o Venue West Ltd., 1704-1200 Alberni Street, Vancouver, British Columbia V6E 1A6.

SEPTEMBER

CANADIAN ASSOCIATION OF ORTHODONTISTS, 31ST ANNUAL MEETING AND CONVENTION, Hotel Frontenac, Quebec City, September 8-9, 1979. Contact: Dr. R. Faith, 605-1538 Sherbrooke Street West, Montreal, Quebec, or Dr. J.J. Schachter, Box 952, Saskatoon, Saskatchewan S7K 3M4.

CANADIAN ACADEMY OF ENDODONTICS, 1979 Annual Meeting, Quebec City, Quebec, September 8-9, 1979. Contact: Dr. Jean Claude Giguere, 1575 Chemin St. Louis N., Sillery, Quebec G1S 1G4.

CANADIAN ASSOCIATION OF ORAL AND MAXILLOFACIAL SURGEONS ANNUAL MEETING, Quebec City, September 8-11, 1979. Theme: Maxillofacial Trauma. Contact: Dr. Victor Goodyer, 565 St. Jean, Quebec City, Quebec G1R 1P5.

CANADIAN ACADEMY OF ORAL RADIOLOGY ANNUAL MEETING, Quebec City, September 9, 1979. Contact: Dr. A. Ruprecht, Department of Diagnosis and Oral Radiology, University of Saskatchewan, Saskatoon, Saskatchewan S7N 0W0.

ROYAL COLLEGE OF DENTISTS OF CANADA SYMPOSIUM, Chateau Frontenac Hotel,

Quebec City, September 9-10, 1979. Theme: "1979 — The International Year of the Child: Dental Perspectives." Speakers are from Denmark, Switzerland, the United States and Canada. Contact: Dr. C.L.B. Lavelle, Program Chairman, RCDC Symposium, Faculty of Dentistry, University of Manitoba, Winnipeg, Manitoba R3E 0W3.

39TH ANNUAL CONVENTION OF THE NORTHERN ONTARIO DENTAL ASSOCIATION, North Bay, Ontario, September 14 — 16, 1979. Contact: Dr. Yosh Kamachi, Secretary-Treasurer, Northern Ontario Dental Association, 161 Main Street East, North Bay, Ontario P1B 1A9.

OCTOBER

CANADIAN SOCIETY OF FORENSIC SCIENCE ANNUAL MEETING, Ritz Carlton Hotel, Montreal, October 15-19, 1979. Two-day symposium on Dentistry and the Law will be held the 15th — 16th. Contact: Dr. R.B.J. Dorion, president, Canadian Society of Forensic Science, Suite 710D, Sun Life Building, Montreal, Quebec H3B 2V6.

NOVEMBER

TORONTO ACADEMY OF DENTISTRY Annual Winter Clinic, Royal York Hotel, Toronto, November 22, 1979. Contact: Academy of Dentistry, 234 St. George Street, Toronto, Ont. M5R 2P2.

INTERNATIONAL MEETINGS

JUNE

FRENCH ORTHODONTIC SOCIETY 1979 CONGRESS, Paris, France, June 1-4, 1979. Themes: New Occlusal Concepts in Orthodontic Treatment and Treatment with Extraction of First Molars. Contact: J. Philippe, 44 rue Jean Goujon, 75008 Paris, France.

VIII CONGRESS of the Federación Odontologica Latinoamericana and Regional Organization for Latin America of the FDI (FOLA/LARO), Buenos Aires, Argentina, June 17-20, 1979. Contact: Dr. A.O. Gómez, president, Cora, Azcuénaga 490 — Iro.C, Buenos Aires, Argentina.

GERMAN DENTAL ASSOCIATION together with the Dental Section of the Austrian Medical Practitioners Association, Salzburg, Austria, June 19-July 1, 1979. Contact: Bundesfachgruppe für Zahn-, Mund- und Kieferheilkunde d. Österreichischen Ärztekammer, Weiburggasse 10-12, A-101 Vienna, Austria.

SWISS DENTAL SOCIETY (SSO), Davos, Switzerland, June 21-23, 1979. Contact: Hans Widmer, president of the Graubündnerische Zahnärzte-Gesellschaft "Weisses Kreuz", Vazeralgasse 19, 7000 Chur, Switzerland.

ACADEMY OF GENERAL DENTISTRY ANNUAL MEETING, New Orleans, June 23-27, 1979. Contact: Department of Meeting Planning, Academy of General Dentistry, 211 East Chicago Avenue, No. 1244, Chicago, Illinois 60611, U.S.A..

AMERICAN DENTAL SOCIETY OF EUROPE, 85th Meeting, St. Moritz, June 25-29, 1979. Contact: Brian J. Parkins, Society Secretary, 57 Portland Place, London W1N 3AH, England.

SOUTHERN ACADEMY OF PERIODONTOLOGY, Williamsburg, Va., June 27-30, 1979. Contact: Mrs. Frances N. Allen, P.O. Box 1300, Clinton, Miss. 39056, U.S.A.

JULY

SECOND ASIAN PACIFIC CONGRESS IN ANXIETY AND PAIN CONTROL IN DENTISTRY, Honolulu, Hawaii, July 2-5, 1979. Contact: Australian Society for the Advancement of Anaesthesia and Sedation in Dentistry, Suite 904, Hooker House, 175 Pitt Street, Sydney, New South Wales 2000.

ASSOCIATION OF AMERICAN DENTISTS, Kansas City, Ks., U.S.A., July 13-14, 1979. Contact: Dr. Melvin T. Munn, 10511 Wyatt Street, Dallas, Tx. 75218, U.S.A.

SOCIETY FOR THE ADVANCEMENT OF ANAESTHESIA IN DENTISTRY, Second International Congress on Modern Pain Control (Sedation, Anaesthesia and Analgesia in Dentistry), Royal Lancaster Hotel, London, England, July 13-16, 1979. Contact: secretary, SAAD '79, 53 Wimpole Street, London W1M 7DF, England.

FOURTH DENTAL CONGRESS of Rio Grande do Sul and the 14th Brazilian Dental Congress, Porto Alegre, Rio Grande Do Sul, Brazil, July 14-20, 1979. Contact: Luis Alberto A. Kramer, Fourth Congresso Odontológico Rio Grandense, Caixa Postal 1118-90000, Porto Alegre RS, Brazil.

INTERNATIONAL ASSOCIATION OF DENTISTRY FOR CHILDREN Seventh Congress, Budapest, July 19-22, 1979. Contact: Congress Bureau Motesz, H1361 Budapest, P.O. Box 32, Hungary.

7TH INTERNATIONAL SYMPOSIUM ON DENTAL HYGIENE, Vancouver, British Columbia, July 25-28, 1979. For details see listing under "Canadian Meetings".

AMERICAN NATIONAL DENTAL HYGIENISTS' ASSOCIATION, Washington, DC, U.S.A., July 29-August 3, 1979. Contact: Ms. Lynda Stallworth, 419 W. Queen, #7, Inglewood, California 90301, U.S.A.

AUGUST

FIRST LATIN AMERICAN CONGRESS and the Second National Congress on Institutional Odontology, Mexico City, Mexico, August 13-17, 1979. Contact: Dr. Vincente A. Garza, President of the Organizing Committee, Unidad de Congresos, C.M.N., Avenida Cuahatemoc, No. 330. 4th floor, Mexico 7, D.F. Mexico.

62ND ANNUAL SESSION OF THE SCANDINAVIAN ASSOCIATION FOR DENTAL RESEARCH (Scandinavian Division of IADR), Bergen, Norway, August 17-18, 1979. Contact: Dr. Trygve Lie, School of Dentistry, University of Bergen, Arstadveien 17, N-5000 Bergen, Norway.

SEPTEMBER

INTERNATIONAL ASSOCIATION FOR ORTHODONTICS, New Orleans, La., U.S.A., September 12-15, 1979. Contact: Ms. Joanna Carey, 645 N. Michigan Avenue, Suite 522, Chicago 60611, U.S.A.

AMERICAN ASSOCIATION OF ORAL AND MAXILLOFACIAL SURGEONS Annual Meeting, New Orleans, La., U.S.A., September 14-18, 1979. Contact: AAOMS, 211 East Chicago Avenue, Chicago, Illinois 60611, U.S.A..

AMERICAN SOCIETY OF PSYCHOSOMATIC DENTISTRY AND MEDICINE, Miami, Fl., U.S.A., September 15-16, 1979. Contact: Dr. Leo Wollman, 2802 Mermaid Avenue, Brooklyn, N.Y. 11224, U.S.A.

INTERNATIONAL ACADEMY OF GNATHOLOGY, Coronado, California, U.S.A., September 18-23, 1979. Contact: Dr. Charles G. Eller, 4223 Palm Avenue, La Mesa, California 92041, U.S.A.

SIXTH INTERNATIONAL CONFERENCE ON ENDODONTICS, Philadelphia (University of Pennsylvania Centennial Scientific Symposia) U.S.A., September 21-24, 1979. Contact: Dr. W. Walter Cohen, School of Dental Medicine, 4001 Spruce Street, Philadelphia, Pa. 19104, U.S.A.

AMERICAN SOCIETY OF PSYCHOSOMATIC DENTISTRY AND MEDICINE, San Diego, California, U.S.A., September 25, 1979. Contact: Mr. Leo Wollman, 2802 Mermaid Avenue, Brooklyn, N.Y. 11224, U.S.A.

ANNOUNCEMENTS

AVIS

38TH ANNUAL MEETING OF THE JAPAN ORTHODONTIC SOCIETY, Sapporo, Japan, September 25-27, 1979. Contact: professor Shinki Nakamura, Hokkaido University, School of Dentistry, Nishi 7-chome, Kita 13-jo, Kita-ku, Sapporo, Japan.

ORAL-FACIAL ANOMALIES: RESEARCH AND MANAGEMENT, Philadelphia, Pa., (University of Pennsylvania Centennial Scientific Symposia) U.S.A., September 26-30, 1979. Contact: Dr. W. Walter Cohen, School of Dental Medicine, 4001 Spruce Street, Philadelphia, Pa. 19104, U.S.A.

NEW ORLEANS DENTAL CONFERENCE, New Orleans, La.,

U.S.A., September 27-30, 1979. Contact: Dr. Peter L. Glaser, 2121 N. Causeway Blvd., Suite 272, Metairie, La. 70001, U.S.A.

OCTOBER

FIRST INTERNATIONAL CONGRESS ON HORMONES AND CANCER, Rome, Italy, October 4-6, 1979. Contact: professor S. Iacobelli, Laboratori di Endocrinologia Molecolare, Istituto de Clinica Osterica e Ginecologica, Universita Cattolica, Via Pineta Sacchetti, 644-00168 Rome, Italy.

AMERICAN ASSOCIATION OF HOSPITAL DENTISTS, Denver, Co., October 4-7, 1979. Contact: Dr. George A. Kentros, University of

Alabama, School of Dentistry, 1919 Seventh Avenue South, Birmingham, Ala. 35294, U.S.A.

AMERICAN INSTITUTE OF ORAL BIOLOGY, Palm Springs, California, U.S.A., October 6-10, 1979. Contact: Mrs. Barbara P. Ward, P.O. Box 481, South Laguna, California 92677. U.S.A.

NEW YORK STATE ACADEMY OF DENTAL PRACTICE ADMINISTRATION MEETING, Toronto, Ont., Can., October 12-13, 1979. Speaker: Dr. Harold Wirth of New Orleans. Contact: New York State Academy of Dental Practice Administration, 1736 Mount Hope Avenue, Rochester, New York 14620, U.S.A..

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ALBERTA — Edmonton. Dental practice for sale in southwest Edmonton. Well established, preventive-oriented group practice, composed of four dentists and three hygienists. Dental suite consists of two operatories and mini-lab. Will consider associating with option to purchase. Reply to CDA Box Number 1881.

ALBERTA — Nanton. Dentist required for Southern Alberta town with a drawing area of 5,000. Near to Calgary and mountains. Office to be located in new medical building. Telephone: (403) 486-2913, or reply to P.O. Box 400, Nanton, Alta. T0L 1R0.

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SOUTHERN ALBERTA. Large practice with four operatories in new building. Only dentist serving a drawing area of 11,000. Near good hunting and fishing. Close to mountains and National Park. Reply to CDA Box Number 1861.

SASKATCHEWAN — Saskatoon. Established, extremely successful, general practice for sale. Attractive office with four operatories; two equipped for four-handed dentistry. Leaving for graduate work. Tremendous opportunity. Assume existing leave commitments and business overhead. Will accept low down payment for equity in practice, and will associate until September, if desired. Contact: Dr. D. Grant Metzler, 1121 Louise Ave., Saskatoon, Sask. S7H 2P8, phone: (306) 373-8355.

MANITOBA — Morden. Practice for sale in Medical-Dental Building in a very pleasant, growing community, seventy five miles south-west of Winnipeg. One fully equipped operator with lab facilities and space for a second operator, modern equipment — 2½ years old. Hospital privileges available. Owner returning to school. For information contact: Dr. E.G. Roehm, Box 1840, Morden, Man. R0G 1J0, or phone: (204) 822-5206 (evenings).

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ONTARIO — Haileybury. For rent: Office space at the John McKay-Clements Memorial Medical Arts Centre, situated in the Town of Haileybury. For further information please contact Mrs. Margaret McKay-Clements, President, John McKay-Clements Memorial Medical Arts Centre, P.O. Box 970, Haileybury, Ont. P0J 1K0. Telephone: (705) 672-3721.

ONTARIO — Ottawa. Active prosthetic practice for sale. Includes 2 room operatories, large laboratory, completely equipped office situated on residential street downtown; on site parking. Present owner will help the purchaser by staying in the office for up to 3 months, if requested. Time is all important as the lease runs out Sept. 30, 1979, and must be renewed before this date. Reply to CDA Box Number 1888.

ONTARIO — Toronto. Dentists required for a new ultra-modern dental clinic recently opened in West Toronto. All applicants must be ambitious, quality conscious and preventive oriented. This 3,000 sq. ft. clinic features eight fully equipped operatories, panelipse, nitrous oxide, brand new equipment, as well as the assistance of hygienists and auxiliary personnel, all encompassed in relaxed, enjoyable surroundings. A large patient volume ensures excellent remuneration for any ambitious individual. Please send resumé to CDA Box Number 1890.

ONTARIO — Toronto. Suites available in modern air-conditioned medical building for group or individual practice, 208 Bloor St. W. near University Ave. Laboratory, X-ray and pharmacy in building. Large municipal parking in rear and near east/west subway exits. Phone: (416) 960-0723.

ONTARIO — East of Toronto. Busy family practice for sale (30 minutes drive from metro center), established family practice, professionally designed, 1200 sq. ft. facility in Medical-Dental building, 3 operatories now equipped, Adec carts — Dental-Eze, room for more, hospital privileges available, above average earnings, owner returning to U.S. For additional information contact: Sorrenti Management Inc., 1287 St. Clair Avenue West, Suite 7, Toronto, Ont. M6E 1B8. Phone: (416) 651-2323.

ONTARIO: Associate required, full or part-time, for small town, population 7,500, within 5 miles of city of 75,000; 60 miles from Toronto, 20 miles from Hamilton. Present associate leaving; associate employed for 7 of 10 years; hospital privileges can be arranged; 3 operatories with new equipment available for associate. Land has been purchased, and plans made for new building with space available for associate's office. Excellent financial security. Reply to CDA Box Number 1884.

ONTARIO. Practice for sale, town of 15,000, east proximity of Toronto. Three operatories, good income. Quick sale preferred. Phone: (416) 633-7040.

QUEBEC — Montreal. For sale: Established general practice, with equipment, in modern group practice, 2,500 sq. ft. Shared facilities and staff, including hygienist. Excellent growth potential in pleasant community. Dentist re-locating. Reply to CDA Box Number 1880, or phone: (514) 768-0855.

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ASSOCIATESHIP AVAILABLE

YUKON — Whitehorse. Associateship available in a unique one year old dental office, 1,800 sq. ft., with three operatories. Located in a renovated older home in downtown Whitehorse. Good environment to work in. Reply to: Dr. R.E. Pearson, 309 Wood Street, Whitehorse, Yukon Territory. Telephone: (403) 667-7338.

BRITISH COLUMBIA — Vancouver. Dentist, experienced in all aspects of

general dentistry, seeks full or part-time associateship in Vancouver area. Available after July. Short-term associateship will also be considered, ideal for dentists contemplating a long summer vacation. Reply to CDA Box Number 1894.

BRITISH COLUMBIA — Vancouver. Experienced associate required for a busy, well established practice. Associate must be willing to stay for a long period of time. Reply to CDA Box Number 1889.

BRITISH COLUMBIA — Vancouver, Surrey area. Oral Surgery associate with recent residency background in all phases of oral and maxillofacial surgery. Future partnership possibilities in an active diverse growing practice. N.D.E.B. or ability to sit local specialty board essential. Resumé. Reply to CDA Box Number 1897.

ALBERTA — Medicine Hat. Associate required for a well established, busy, modern, preventive oriented practice; with two other dentists. All aspects of general dentistry, with modern equipment. Eight operatories, panelipse, automatic X-ray developer. Hospital privileges available. Opportunity for full partnership if desired. In fast-growing city of 35,000 people, near Cypress Hills Provincial Park. Contact: Drs. Habijanac or Gregory at 304 — Royal Bank Building, Medicine Hat, Alta. Telephone: (403) 527-5526.

ALBERTA — Strathmore. Associate wanted in newly set up practice with experienced dentist in town of Strathmore, population 2,500. Apply Box 1522, Strathmore, Alta. T0J 3H0.

ALBERTA — Westlock. Full time associate required for active two dentist practice situated 47 miles from Edmonton. All new equipment (Cox, Pelton and Crane Chairs etc.) in two operatories. Please enclose pertinent particulars. Contact: Dr. R.J. Mielke, P.O. Box 1137, Westlock, Alta. T0G 2L0.

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ONTARIO — Collingwood. Associate wanted. Flexible opportunity available in a three operator busy practice with or without auxiliary staff, in a year round recreational area, 90 minutes north of Toronto. Reply to: Kristeven Ltd., 22 Second St., Collingwood, Ont. L9Y 1E3.

ONTARIO — Ottawa. Associate required for quickly developing practice of rehabilitative orientation. South Ottawa. Reply to CDA Box Number 1889.

EASTERN ONTARIO. Associate required for modern dental practice, midway between Toronto and Montreal. Reply to CDA Box Number 1872.

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BRITISH COLUMBIA — Chilliwack. Dental Hygienists required. Opportunity for two full time hygienists in modern preventively oriented dental practice in the beautiful Fraser Valley, one hour drive from Vancouver. Graduate inquiries welcome. Please contact: Mrs. Bev. Grunau, c/o 2 — 103 Mary Street, Chilliwack, B.C. V2P 4H3. Telephone: (604) 792-0616.

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BRITISH COLUMBIA — Southeast Interior town requires general practitioner interested in preventive oriented, total patient care family practice. Physical plant is modern, complete and comfortable. Enthusiastic, competent staff. Growing prosperous community surrounded by superb country for mountaineering, hunting, fishing, nordic and alpine skiing and other outdoor activities. One partner returning to graduate school. Reply to CDA Box Number 1858.

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syringe has three complete finger rings for a sure non-slip grip.

SHARP—Relax, Hypo Needles are ultra sharp. The shape of a needle has *a lot* to do with the ease of penetration. Hypo Needles geometric design gives an ultra sharp point which means pain free injections.

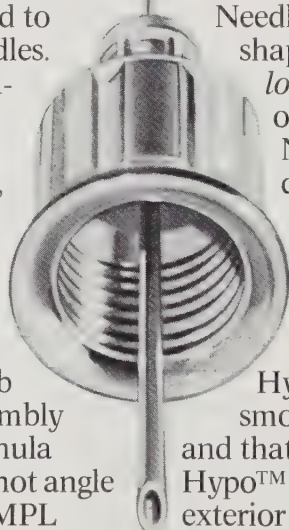
SMOOTH—Relax, Hypo Needles are smooth. Really smooth, and that's because all MPL HypoTM Needles have an exterior lubricant called

“Super Poly Kote”. This lubricant cuts friction drag and lets you slide the needle in and out—easily, smoothly.

HYPOTM NEEDLES—They let you relax.

Ash Temple LIMITED

Another fine product from Ash Temple



opportunity for a young dentist, in an expanding town, in one of the most beautiful recreational areas in B.C. Contact: Gerobeco Holdings Ltd., P.O. Box 167, Burns Lake, B.C., V0J 1E0.

WESTERN CANADA. Opportunity for University trained Orthodontist to associate in busy orthodontic practice. Reply to CDA Box Number 1843.

ALBERTA — Bassano. Dentist wanted to set up practice. Bassano is located on Trans-Canada Highway, 90 miles southeast of Calgary. It is a rapidly growing town of 1,200 and serves as the commercial center for a district including 4,500 people in which there is no dentist. Good selection of commercial and residential property. Strong community support can be expected. Write to Bassano and District Chamber of Commerce, P.O. Box 506, Bassano T0J 0B0, or phone: T. Nystrom, President, at (403) 472-3512 (business) or (403) 472-3535 (home).

ALBERTA — Medicine Hat. Dental Hygienist Wanted: Career minded hygienist required to participate in a modern preventive orientated three man practice. Excellent working conditions, varied and challenging. Located in Medicine Hat, Alta.; a rapidly growing city of 35,000. Please reply to: Dr. Frank Gregory, 537C — 5 Avenue, S.E., Medicine Hat, Alta.

LOCUM TENENS: Needed for July in a Northern Manitoba Region excellent for hunting and fishing. Large clean lakes. A beautiful place to take a vacation. Ultra modern clinic and good help. May elect to stay after August. Reply to CDA Box Number 1896.

ONTARIO — Clifford. Dentist wanted for individual practice in modern facilities at Clifford and Community Medical Centre. This community is located in Southwestern Ontario approximately 50 miles north and west of Kitchener. Apply to: Ray Wightman, Box 70, Clifford, Ont. N0G 1M0 or phone: (519) 327-8014 and evenings (519) 327-8017.

ONTARIO — Dental Underserved Areas. The Ontario Ministry of Health offers financial support for dentists to establish practices in designated underserved dental areas. Locations are available throughout Ontario. Incentive grants, payable over four years, are \$18,000 in Northern Ontario and \$14,000 in Southern Ontario. Alternatively, a guaranteed net professional income of \$28,000 per annum is offered in Northern Ontario. A number of salaried positions are available on mobile dental coaches. Apply to: Dental Officer, Program for Underserved Areas, 15 Overlea Blvd., Toronto, Ont. M4H 1A9 or phone: (416) 965-2647.

See page 252

UNIVERSITY OF MANITOBA

FACULTY OF DENTISTRY

The Department of Rehabilitative Dental Science invites applications for a full-time academic position in the section of Prosthodontics. (Complete and Removable Prosthodontics)

Prospective candidates should have advanced training in the discipline and credentials must be compatible with licensure requirements for the Province of Manitoba. Academic rank and salary are commensurate with education, qualifications and experience.

Responsibilities include teaching undergraduates at both preclinical and clinical levels. Excellent opportunities and facilities are available for research interests.

Canadian citizens, landed immigrants and others eligible for employment in Canada at the time of application are especially encouraged to apply.

Applications, nominations or inquiries should be sent to: Dr. P.M. Jackin, Chairman, Rehabilitative Dental Science, Faculty of Dentistry, University of Manitoba, 780 Bannatyne Ave., Winnipeg, Manitoba, R3E 0W3.

DALHOUSIE UNIVERSITY FACULTY OF DENTISTRY

DIRECTOR OF CLINICS

The Faculty of Dentistry as a University announces the availability of a position of Director of Clinics effective July 1st, 1979. The applicant should have a D.D.S. degree and be capable of being licensed in Nova Scotia and should have had significant academic and administrative experience. Duties will involve the management of the current and soon to be expanded Dental Clinic. Knowledge of computerised clinical management information systems and an understanding of current concepts of quality assurance and their applications would be desirable. Teaching duties and/or research activities can be included in the responsibilities of the position. Private practice privileges may be arranged. Rank and salary negotiable.

Applications should be submitted by June 15, 1979 to Dr. Ian C. Bennett, Dean, Faculty of Dentistry, Dalhousie University, Halifax, Nova Scotia B3H 3J5.

The Province of British Columbia

DENTAL HYGIENISTS

The Community Health Programs, Ministry of Health, offers excellent opportunities at VARIOUS LOCATIONS for career-minded hygienists to participate in community educational, motivational and preventive pre-school and school dental programs. Duties include teaching in classrooms, conducting dental inspections, compiling statistical data, providing necessary follow-up services and performing other duties as a team leader in area concerned.

Qualifications — A recognized university diploma in dental hygiene or equivalent and preferably some experience subsequent to graduation. May be required to drive own car, on mileage, or a government car.

Salary — \$16,500 — \$18,900

Quote Competition 79:764

Closing Location — Victoria

Closing Date — IMMEDIATELY

Positions are open to both men and women
Obtain and return applications at address below, unless otherwise indicated



Province of British Columbia
Public Service Commission

544 Michigan Street, Victoria, B.C. V8V 1S3

Marketplace

from page 251

ONTARIO — ENDODONTIST wanted to associate with busy, successful practice, leading to early partnership. Must be certified or certifiable in Ontario. Reply in strict confidence to CDA Box Number 1893.

QUÉBEC — Université Laval. A full-time academic appointment in dental research (oral biology) will be available June 1st 1979. The successful applicant will join a recently formed research team in oral microbiology-biochemistry area. He/she must hold a PhD in an appropriate field or a DDS (DMD) and M.Sc. (MSD) with experience in basic science research. It is expected that the applicants would have acquired training and experience in research in a dentistry-related subject and will be able to propose a research program. Beside research, duties will include graduates supervision and teaching with minimal undergraduate responsibilities. Candidates must be prepared to fulfill French language requirements in a reasonable period of time. Salary and rank commensurate with qualifications and experience according to a collective agreement. Letter of application along with a curriculum vitae and three letters of recommendation should be sent before July 15 to: Dr. Laurent Dufour, Associate Director, École de médecine dentaire, Université Laval, Québec, Canada, G1K 7P4.

QUÉBEC — Montréal Métropolitain. Dentiste demandé pour pratique générale. Bureau moderne. Avenir assuré. Conditions à discuter. Trois salles d'opérations disponibles. Système de rappel. Hygiéniste. Assistante. Clientèle de pédiodontie exclusive à l'intéressé. Radiographie panoramiques. Accès facile. Près du métro. Répondre à CDA Casier Postal 1877 pour la discrétion, garantie bilatérale.

QUEBEC. AVAILABLE TO SHARE. Two dental operatory suites, part-time, Friday and Saturday Fully equipped, (supplies included). To share with the present dentist, desirous of cultivating with the inquiring dentist's own new patients. No expenses but the two or three days revenue to be negotiated. Reply to CDA Box Number 1875, or call: (514) 342-1742.

OPPORTUNITIES WANTED

BRITISH COLUMBIA — Kelowna. Dentist moving to Kelowna. Interested in part-time associateship in Kelowna or surrounding area. Twenty-five years' experience in general practice and preventive dentistry. Reply to CDA Box Number 1882.

CLASSIFIED ADVERTISEMENTS

REMITTANCE MUST ACCOMPANY CLASSIFIED ADS.
FORMS CLOSE ON 3rd OF MONTH PRECEDING MONTH OF ISSUE.

Direct advertising copy to:
Marie Cosgrave, Classified Advertising Dept.,
Canadian Dental Association,
1815 Alta Vista Drive, Ottawa, Ontario K1G 3Y6.
Telephone: (613) 523-1770.

CLASSIFIED ADVERTISING RATES

(Per Insertion Per Issue):

Minimum (50 words or less)	\$20.00
Each additional word	.50
Service charge for C.D.A. Box No.	3.00

DISPLAY CLASSIFIED ADVERTISING RATES:
Available on request.

Replies to C.D.A. Box numbers should be addressed as follows:

C.D.A. Box
Advertising Department,
Canadian Dental Association,
1815 Alta Vista Drive
Ottawa, Ontario K1G 3Y6

Box numbers must appear on envelope. Names of box number advertisers cannot be revealed.

Although the Canadian Dental Association believes that the classified advertisements which appear in these columns are from reputable sources, the Canadian Dental Association neither investigates the offers being made nor assumes any responsibility concerning them.

BRITISH COLUMBIA — Prince George. Dentist with 12 years in general practice is seeking to associate, to do locums or to purchase a practice in the Victoria and district area. Availability, July 1, 1979. Please reply to: 5663 Moriarty Drive, Prince George, B.C. V2N 3P7.

EQUIPMENT

FOR SALE. Ivory Spaceline KX unit, complete with Philips X-ray, ceiling mount, tray, light, slow and high speed handpieces, new rosewood cabinet. Asking \$10,000. Also S.S. White Pump Chair with Heck conversion, \$300.00. Contact: Dr. A.A. Wasylyshen, 350 Borland Street, Williams Lake, B.C. V2G 1R6.

QUEBEC. Wish to purchase new or used dental X-ray unit for reasonable price. Reply to CDA Box Number 1876, or call: (514) 342-1742.

MISCELLANEOUS

BRITISH COLUMBIA — Salt Spring Island. 2½ acres with classic 2 storey home, caretaker's cottage, approx. 1700' waterfront, MOORAGE, walk to town, \$165,000. Contact: Kevin Bell, phone: 537-5833, or Miller & Toynbee, Box 8 Ganges, B.C. 537-5537.

VACATION RENTALS

MAUI — Lahaina. Luxury single storey waterfront apartment in spacious landscaped lowrise area. 1 bedroom 2 bathrooms, living room with hide-a-bed. Fully equipped including dishwasher, washer/dryer, bicycles, color TV, carport etc. Standard weekly rates of U.S. \$518 for 2 persons and U.S. \$602 for 4 persons, reduced by 18% between May 15th and December 15th. Phone: (604) 224-6209, 5-6pm Pacific time.

MOUNTAIN SOLITUDE. All the comforts of home on the shore of an alpine lake, 6800 feet up in a breathtakingly lovely mountain provincial park. Great spot for hiking, birdwatching, alpine flowers, fishing and relaxing. No T.V., just mountain solitude. For details contact: Cathedral Lakes Resort, RR #1, Keremeos, B.C. V0X 1N0. Phone: (604) 499-5848.

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Advertisers in the Journal of the Canadian Dental Association are accepted on the basis of the Association's Standards on Advertising. Product claims are based on adequate evidence acceptable to the Association and are in keeping with highest professional ethics.



REGISTRATION FORM

PLEASE PRINT OR TYPE

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address
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Dentist ☐
Hygienist ☐
Assistant ☐
Technician ☐

ADDITIONAL REGISTRATION: (Required for participation to one or more activities of the convention)

REGISTRATION FEES

DENTISTS:

- CDA Members and foreign dentists: \$125. before or \$150. after Aug. 1st, 1979 \$
— Canadian, Non-CDA Members : \$150. before or \$175. after Aug. 1st, 1979 \$

Registration entitles to attend: — Scientific activities
— Luncheons on Monday, Tuesday and Wednesday
— Evening socials on Sunday and Tuesday
— Exhibitors Hall

AUXILIARIES: Hygienists, assistants and technicians \$10. per person \$

Registration entitles to attend: — Scientific activities
— Exhibitors Hall

Tickets will be sold for social activities and luncheons

HOUSE: (other than dentists and auxiliaries) \$10. per person \$

Registration entitles to attend: — Scientific activities
— Exhibitors Hall

Tickets will be sold for social activities and luncheons

PRESIDENT'S BALL

Monday, September 10, 1979 — \$35. per person

\$

ADDITIONAL ACTIVITIES PROGRAM (please mark what you would like to do)

POSSIBLE ACTIVITIES
FOR WHICH TICKETS
WILL BE SOLD AT
REGISTRATION DESK.

- Guided visits and tours
— Culinary demonstration
— Fashion show
— Wine and cheese tasting
— Boat tour on St. Lawrence River

☐
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Total \$

Registration BEFORE August 1st, 1979 entitles to the drawing of a trip to the 67th World Dental Congress (FDI) in Paris, October 20 to 26, 1979.

CANCELLATION: Money refunded ONLY if cancellation is made before August 1st, 1979.
Please make cheque or money order to: 1979 CDA NATIONAL CONVENTION
Mail to: 1575 St. Louis Road, Sillery, Quebec G1S 1G4

DATE

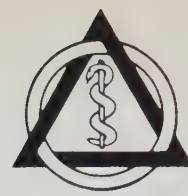
SIGNATURE

Français au verso

CONGRES NATIONAL
NATIONAL CONVENTION

CANADIAN DENTAL ASSOCIATION

Québec, P.Q., 9-12 sept. 1979



FORMULE D'INSCRIPTION

S.V.P. ÉCRIRE EN LETTRES MOULÉES

Nom..... DENTAL LIBRARY.....

Adresse... UNIVERSITY OF TORONTO.....

124 EDWARD ST.

TORONTO 2.....

Dentiste
Hygiéniste
Assistant(e)
Technicien(ne)

INSCRIPTION SUPPLÉMENTAIRE: (obligatoire pour participer à une activité du congrès)

FRAIS D'INSCRIPTION

DENTISTES:

- Membres de l'ADC et / ou étrangers: \$125. avant ou \$150. après le 1er août 1979 \$
- Canadiens, non membres de l'ADC: \$150. avant ou \$170. après le 1er août 1979 \$

L'inscription permet l'accès: — aux activités scientifiques
— aux déjeuners du lundi, mardi, mercredi
— aux soirées du dimanche et du mardi
— aux salles d'exposition

AUXILIAIRES: hygiénistes, assistant(e)s et technicien(ne)s \$10. par personne \$

L'inscription permet l'accès: — aux activités scientifiques
— aux salles d'exposition

Des billets seront vendus pour les activités sociales et les déjeuners

CONJOINTS: (autres que dentistes ou auxiliaires) \$10. par personne \$

L'inscription permet l'accès: — aux activités scientifiques
— aux salles d'exposition

Des billets seront vendus pour les activités sociales et les déjeuners

BAL DU PRÉSIDENT

Lundi le 10 septembre 1979 — \$35. par personne

\$

PROGRAMME DES DAMES (S.V.P. indiquez ce que vous aimeriez faire)

ACTIVITÉS POSSIBLES POUR
LESQUELLES DES BILLETS
SERONT VENDUS
LORS DU CONGRÈS

- Visites guidées
— Démonstration culinaire
— Défilé de mode
— Dégustation de vins et fromages
— Excursion en bateau sur le fleuve St-Laurent

☐
☐
☐
☐
☐

Total \$

L'inscription AVANT LE 1er AOÛT 1979 rend éligible au tirage d'un voyage
au 67e congrès dentaire mondial (FDI) à Paris du 20 au 26 octobre 1979.

ANNULATION: Seulement ceux qui annuleront avant le 1er août 1979 seront remboursés.
Faire chèque ou mandat à l'ordre de: CONGRÈS NATIONAL DE L'ADC 1979
Poster au secrétariat du congrès: 1575 Chemin St-Louis, Sillery, Québec G1S 1G4

DATE: _____

SIGNATURE _____

FORMULE DE RÉSERVATION DE CHAMBRE D'HÔTEL
HOTEL RESERVATION FORM

(LETTRES MOULÉES, S.V.P. — PLEASE PRINT)

Nom — Name
 Adresse — Address

Dentiste ☐ Dentist
 Hygiéniste ☐ Hygienist
 Assistant(e) ☐ Assistant
 Technicien(ne) ☐ Technician
 ☐

HÔTEL INDiquer 3 HÔTELS PAR ORDRE DE PRÉFÉRENCE
 LIST 3 HOTELS IN ORDER OF PREFERENCE

	Simple Single	Jumeaux Twin	Double	Suite
1.	☐	☐	☐	☐
2.	☐	☐	☐	☐
3.	☐	☐	☐	☐

Date d'arrivée A.M. Date arriving
 P.M.
 Date de départ A.M. Date departing
 P.M.

Voir au verso pour
l'emplacement des
hôtels.

See reverse side for
hotels locations.

	Simple Single	Double Jumeaux / Twin	Suite
1. Hilton	\$44	\$54	\$134-416
2. Château Frontenac	\$42, 46, 52	\$52, 56, 62	\$100-200
3. Loews Le Concorde	\$45	\$55	\$90-400
4. Auberge des Gouverneurs	\$44.50	\$54.50	\$115-250
5. Holiday Inn	\$30	\$36	\$55

Date limite pour les demandes de réservations: 1er août 1979
 Deadline for making advance reservations: August 1st, 1979

Retourner cette formule de réservation avant le
 1er août au secrétariat du congrès et NON À
 L'HÔTEL.

Return this reservation form before August 1st
 to the convention headquarters and NOT TO THE
 HOTEL.

Toute modification ou annulation devra être faite, par
 écrit, au secrétariat du congrès avant le 1er août.

All cancellations must be made in writing to the conven-
 tion headquarters before August 1st.

SECRÉTARIAT DU CONGRÈS
CONVENTION HEADQUARTERS

1575 chemin St-Louis
 Sillery, Québec G1S 1G4
 Tél. (418) 527-8969

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Extraoral radiography used in conjunction with intraoral radiography tells the whole story.

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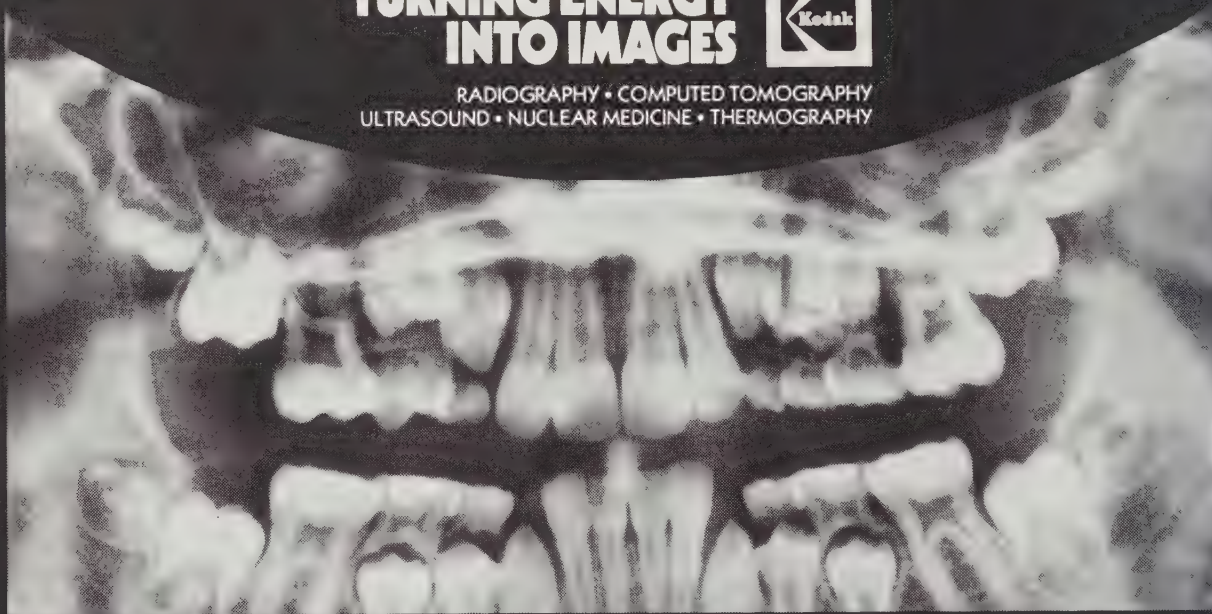
For more information about our panoramic dental X-ray film, write:

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Dept. 4, 3500 Eglinton Avenue West Toronto
Ontario M6M 1V3

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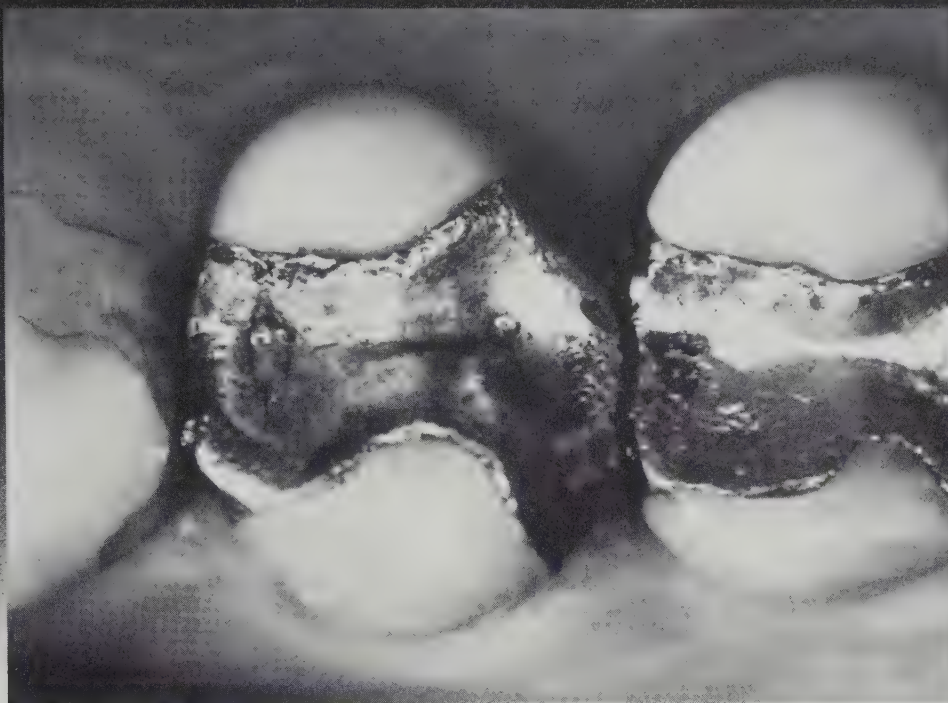


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Indiloy is chemically unique and physically tough. The *only* alloy enriched with indium and copper, it's virtually free of the undesirable, easily corrodible gamma 2 phase. In addition to low creep and high compressive strength, Indiloy expands upon setting, just what you expect of a premium alloy.

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**The Ritter Vanguard Chair.
You're getting much more
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The Vanguard is the solid chair you're looking for. It has many of the features of much costlier chairs and a price hundreds of dollars less. And you can count on Vanguard for reliability. Its solid workhorse reputation and economical cost give you a chair value that's tops.

**Feature for feature, the
Vanguard is a lot of chair.**

Like many costly chairs, all controls for the Vanguard are at your fingertips in the top of the backrest. One control smoothly positions the lounge top, while another actuates the automatic return to patient exit. And when your hands are busy, there is a convenient foot control to adjust height.

Vanguard's thin, contoured backrest and compact headrest mean ample legroom and easy oral cavity access. The standard non-articulating extendable headrest offers simple positioning for tall or short patients.

Your patients are comfortable, too. Flexible arm supports and a firm, but forgiving, lumbar support give your patients security with comfort.

**Look at the features, then look
at the price.**

How much does a Vanguard chair cost? Surprisingly little.

Select the Ritter Vanguard and get more chair for your money. Ask your Ritter dealer for a Vanguard demonstration.

Select Ritter for value

The patient-positioning people.
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Ritter

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June, 1979

Canadian Dental Association

JOURNAL

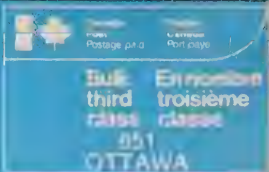
de l'Association Dentaire Canadienne

June, 1979

Vol. 45 no. 6

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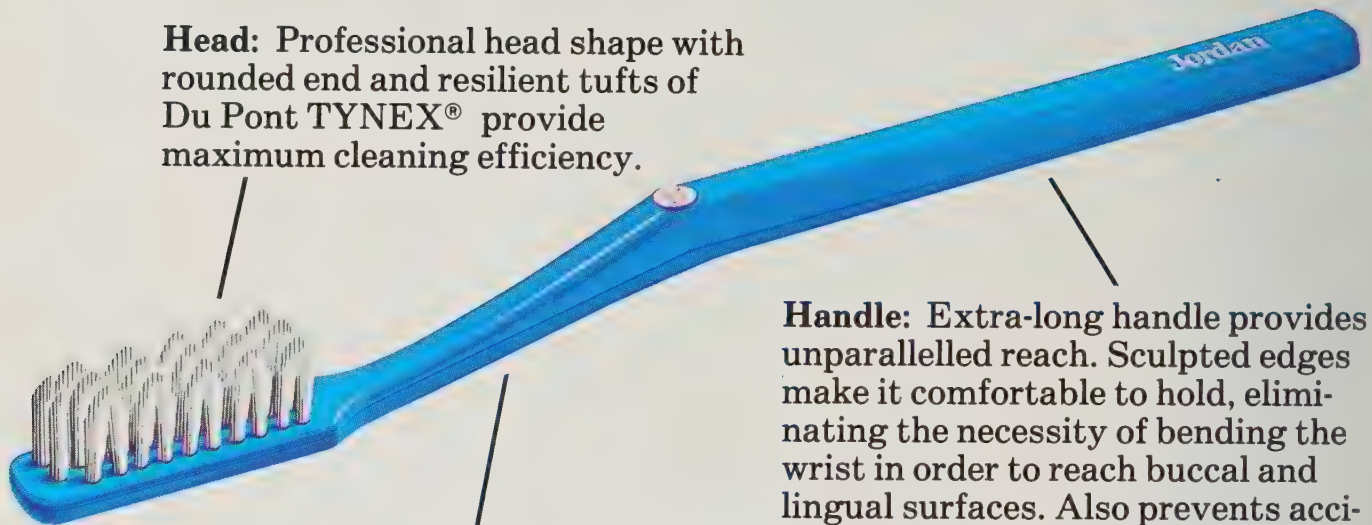
**Trauma to primary dentition —
the how, when, where,
why of it.**

**Nous devons renseigner le
public sur les soins que nous
pouvons apporter aux dents
traumatisées.**

New from Norway

The Jordan Toothbrush

Head: Professional head shape with rounded end and resilient tufts of Du Pont TYNEX® provide maximum cleaning efficiency.



Handle: Extra-long handle provides unparalleled reach. Sculpted edges make it comfortable to hold, eliminating the necessity of bending the wrist in order to reach buccal and lingual surfaces. Also prevents accidental tipping or rotating of brush.

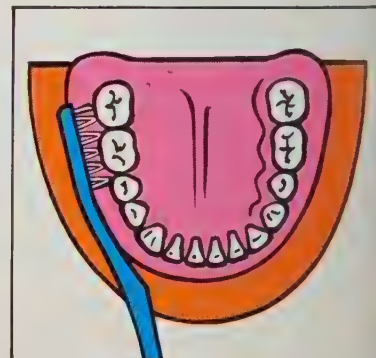
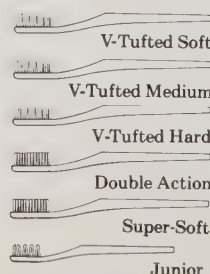
Neck: Slim, curved neck and shoulder design provide easy access to all molar surfaces.

**Designed to reach
where other brushes can't.**

Unique "spoon" silhouette puts tuft ends on the same level as the handle, providing balance and control when brush is pressed against teeth.



Choice of design.



For proven caries reduction...

GOOD

office fluoride treatments



BETTER

office fluoride treatments
plus Crest



Crest...the only dentifrice with proven efficacy in combination with office fluoride treatments.

The latest Crest clinical study[†] has now proven the extended benefit of Crest in combination with acidulated phosphate fluoride (APF) office topicals. This two-year study showed that the group receiving an office APF topical and brushing with Crest had 19 percent fewer DMFS (decayed, missing, or filled surfaces) than the group receiving an office APF topical and brushing with a placebo dentifrice.

Five earlier studies have proven this extended benefit of Crest with SnF₂ topicals. The DMFS increment reduction

for combined Crest plus SnF₂ topicals and prophylaxis ranged from 48 percent to 71 percent.

For further information on these studies—or any of the 21 Crest clinical studies, write to Crest Professional Services, P.O. Box 355, Station "A", Toronto, Ontario M5W 1C5.

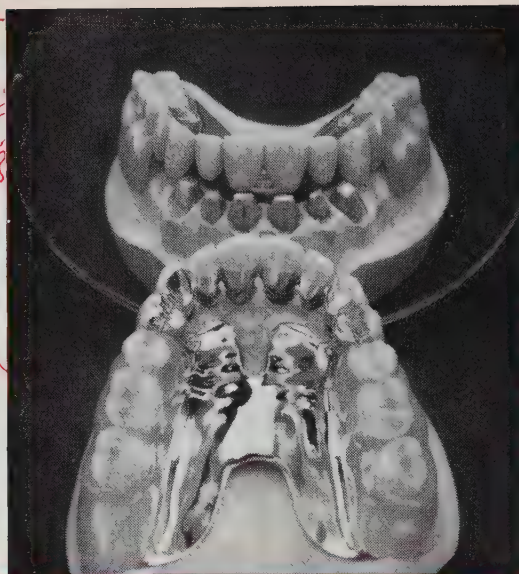
[†]Beiswanger, B.B., et al.: J. Dent. Child. 45:137, 1978



"Crest has been shown to be an effective decay-preventive dentifrice that can be of significant value when used in a conscientiously applied program of oral hygiene and regular professional care."—Canadian Dental Association.

Although there are many fluoride dentifrices, only **Crest** has proven efficacy in combination with office fluoride treatments.

There's a Nobilium laboratory near you



A MARI USQUE AD MARE: FROM SEA TO SEA



Wherever you practice there is a Nobilium laboratory nearby . . . ready to process your partials with the "aristocrat of chromium alloys" . . . partials that satisfy every patient desire for dependable fit, functional service, oral comfort and lifelike aesthetics. Here is the list of skilled laboratories from British Columbia to Nova Scotia equipped with the latest Nobilium equipment and materials and dedicated to serve your every requirement. Entrust your prescriptions to them with confidence.

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Hirsh Dental Laboratories Limited
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Modent Dental Laboratory
881 Eglinton Avenue West

Pearce Dental Lab
250 Lawrence Avenue West

**The Posen & Furie
Dental Laboratories Limited**
1366 Bathurst Street

Walter Wood Dental Laboratories
527A Bloor Street West

ONTARIO — HAMILTON

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Dental Laboratory**
Medical Art Bldg., Hamilton 20

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206 King Street

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172 King Street East

BRITISH COLUMBIA — VANCOUVER

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1070 Homer Street

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Manitoba Dental Labs.
603 Wall Street
Winnipeg, Man. R3G 2T3

ALBERTA — EDMONTON

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Universal Dental Laboratories Ltd.
10066 Jasper Avenue

New-Johnston Dental Labs.
10202 - 102 Street

SASKATCHEWAN — SASKATOON

Aurum Crest Dental Laboratories Ltd.
336 - 6th Ave. North

QUEBEC — STE. THERISE

Lafond & Joly Dental Lab.
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QUEBEC — GRANBY

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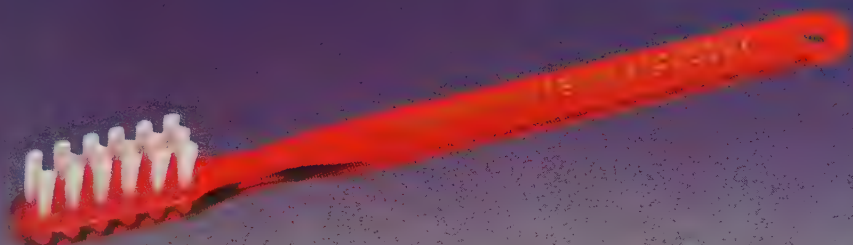
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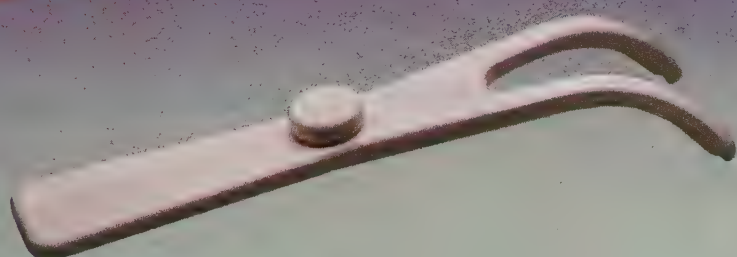
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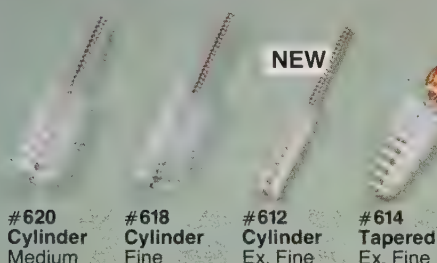


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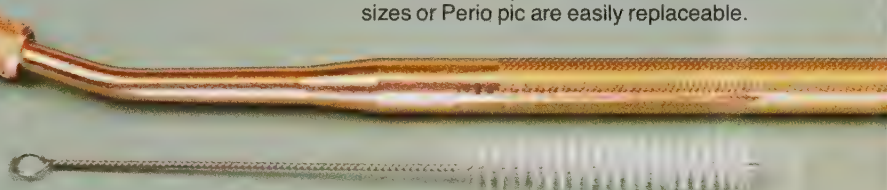
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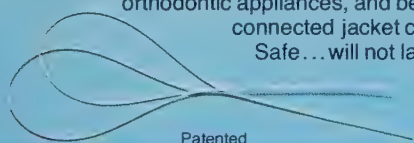
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JOURNAL

de l'Association Dentaire Canadienne

Juin, 1979

vol. 45, no. 6

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COVER

Trauma to primary dentition — it doesn't just happen in sports. Active children are bound to fall, have accidents. One report on how, when and where mishaps occur begins on page 281.

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June, 1979

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La direction du Journal ne partage pas nécessairement les opinions qu'expriment ses collaborateurs à moins que l'Association Dentaire Canadienne ne les ait adoptées officiellement.

Trauma to primary dentition is ignored

This edition of the Journal of the Canadian Dental Association deals with trauma to the dentition.

In the past few years there has been increased importance placed on the protection of our heads and faces in contact sports.

Only a few seconds of watching the Stanley Cup Playoffs would demonstrate the wide variation in protective headgear that is available. Dentists and physicians have been on special advisory committees to help equipment companies design better helmets and masks. School boards and insurance companies have put their varied support to the public's ear to encourage the use of devices to prevent injury.

Recently I received the following message which served as an impetus to write this editorial.

"My name is Mrs. Marie, phone number 741-2222.

My child had a fall two weeks ago and now the front tooth is discoloring. SHOULD HE BE SEEN BY A DENTIST OR IS THERE SOMETHING I SHOULD DO?"

We cannot suggest or expect that each time a child falls he or she should be examined by a dentist. The average growing child falls many times in the first few years of life. What bothered me by that telephone call was the woman's lack of realization that her two year old should be seen by a dentist.

At least the woman called' you may say. That the call was made is no testimonial to our education of Canadians on dental care and its many facets. As dentists we must reach not only the general public, but also the physicians and nurses who deal with the children we will eventually be seeing in our offices.

An informed individual is more likely to seek dental advice when needed and value that care when it is given. Herein lies the solution to our problem. We must teach the public what can be done for traumatized teeth, and the importance of early treatment where necessary. The target groups are medical health professionals, school personnel, parents and the children themselves.

The techniques we use should not end with the printed word. The medium of television as well as lectures and discussions to child, parent and professional groups can provide broad exposure of our knowledge on this topic. Hopefully, parents and those in charge of the welfare of children will become particularly aware of the possible pathology that could be associated with seemingly benign trauma.

Attention to trauma of the primary dentition has been virtually ignored. Once the public understands more about this, they will seek care and avoid some of the unfortunate sequelae that we see in our offices.



Dr. Howard Stein, a paedodontist in Toronto, Ontario, is the speciality contributor in Paedodontics with the Journal of the Canadian Dental Association.

On ne porte pas attention aux traumatismes dentaires

Le présent numéro du Journal de l'Association Dentaire Canadienne traite des traumatismes dentaires. En effet, on attache une importance grandissante, depuis quelques années, à la protection du visage et de la tête dans les sports de contact.

Il suffit de regarder quelques minutes d'une partie de hockey pour s'apercevoir de la grande variété d'équipement disponible pour la protection de la tête. Des dentistes et des médecins ont d'ailleurs fait partie de comités consultatifs spéciaux aidant les fabricants d'équipement à concevoir des casques et des masques protecteurs plus efficaces. Pour leur part, les commissions scolaires et les compagnies d'assurances s'efforcent d'inciter le public à recourir à l'équipement protecteur pour prévenir les blessures.

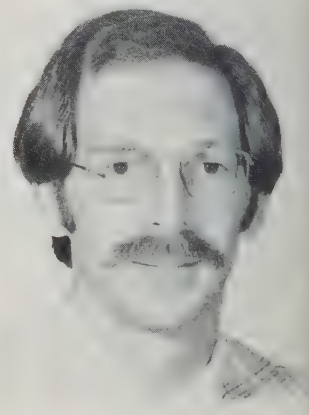
Il y a quelque temps, j'ai reçu un message qui m'a poussé à rédiger le présent éditorial. "Mon nom est Mme Marie et mon numéro de téléphone est 741-2222. Il y a deux semaines, mon enfant est tombé et l'une de ses dents de devant est maintenant en train de se décolorer. DEVRAIS-JE L'AMENER CHEZ LE DENTISTE OU Y A-T-IL QUELQUE CHOSE D'AUTRE QUE JE POURRAIS FAIRE?"

Nous n'irions pas jusqu'à dire qu'il faut amener un enfant chez le dentiste chaque fois qu'il tombe. Un jeune enfant tombe fréquemment au cours des premières années de sa vie. Ce qui m'a irrité dans cet appel téléphonique, c'est que cette femme ne se rendait pas compte que son enfant de deux ans devait être examiné par le dentiste. "Bien sûr, direz-vous, mais elle a au moins appelé". Cet appel ne témoigne certainement pas d'un haut degré d'information du public quant aux soins dentaires sous leurs nombreux aspects. Nous devons indubitablement réussir à sensibiliser le grand public, mais il ne nous faut pas oublier les médecins et les infirmières qui soignent les enfants que nous aurons éventuellement à traiter.

Une fois bien renseigné, on est mieux en mesure de demander et d'apprécier des conseils sur sa santé dentaire, et d'apprécier la valeur des traitements reçus. C'est là que se trouve la solution de notre problème. Nous devons renseigner le public sur les soins que nous pouvons apporter aux dents traumatisées et sur l'importance d'un traitement précoce. Il nous faut donc atteindre les membres du corps médical, le personnel scolaire, les enfants et les parents.

L'information imprimée n'est pas une panacée. Il nous faut aussi recourir à la télévision, à des conférences et à des conversations avec les enfants, les parents et les groupes professionnels pour assurer la plus vaste diffusion possible de notre message. Il est à espérer que les parents et les autres personnes qui ont la garde et la responsabilité d'enfants soient particulièrement conscients des conséquences pathologiques possibles d'un traumatisme qui, à première vue, peut sembler bénin.

On a pratiquement ignoré l'importance des traumatismes à la dentition primaire. Si nous réussissons à sensibiliser le public sur cette question, nous constaterons sans doute une diminution appréciable des cas déplorables que nous devons ensuite traiter, faute de prévention et de traitement précoce.



Le Dr Howard Stein, de Toronto, est le Collaborateur en Pédiodontie du Journal.

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LETTERS

Dr. Nuttall's letter

Editor's note: *The following letter was received by Pat Duminy, general secretary of the Ottawa Dental Society. It was written by Dr. L.B. Nuttall of Prescott, Ontario as a request to have his name removed from the Society's mailing list. Mrs. Duminy's reply follows.*

I graduated in 1923, retired in 1969, have attended our class dinners in Toronto in May and never lost a day through illness in 46 years.

Then, this year, I spent seven weeks at the cancer clinic in Kingston — vocal chords and larynx — but have made a good recovery (perhaps because I never smoked).

I enjoyed my profession for nearly 50 years, long hours, low fees, but had the time and dollars to motor in every Canadian province and 48 states. I also made five trips to Europe. I travelled to Mexico three times and also to Bermuda, Barbados, Trinidad, Hawaii, Australia and New Zealand.

In 1976 we took the boat trip from Vancouver to Skagway and the train over the Trail of '98 to the Yukon. In 1977 I went by motor to the Maritimes again and to Newfoundland.

This year I just tended to my garden, lawns and flowers and we have specialized in eating at all the better restaurants within 60 miles.

I'll be 81 next year so extract me from your list or suffer the pains of another personal history.

Dr. L.B. Nuttall
Prescott, Ontario

The Journal of the Canadian Dental Association is pleased to make this space available for "Letters to the Editor". All letters must be signed and the editor reserves the right to edit communications according to space requirements.

Le Journal de l'Association Dentaire Canadienne est heureux d'offrir cet espace aux lecteurs désireux d'envoyer des "Lettres à la rédaction". Toutes les lettres doivent être signées et la rédactrice en chef se réserve le droit de les raccourcir si le manque d'espace l'impose.



Dr. Nuttall, right, in 1955 with classmate, Dr. Earl Grenzebah.

... Ottawa's reply

Dear Dr. Nuttall:

I am sorry to be so long replying to your letter, but was so touched by it that I felt it merited more than just our local society's acknowledgment and passed it on to the Canadian Dental Association.

The example you have set by 50 years of dedication to your profession and by using the fruits of your profession to expand your knowledge of the rest of the world, should be an inspiration to new and established dentists.

The Ottawa Dental Society does not wish to remove your name from their mailing list because they feel a mind as active as yours would enjoy being kept informed of our current activities.

Mrs. Patricia Duminy
general secretary
Ottawa Dental Society

What's in a word?

In the letter to Monique Bégin (Journal of the Canadian Dental Association, May, 1979) the words "delivery of dental health care" and "modes of delivery" are used. For some time I have objected to the word "delivery" in reference to the performance of dental services.

To my mind, one of the most serious sallies is the concept that dental care can be performed by robots on an assembly-line basis for standardized costs. Many who advocate this attitude do so for political reasons, personal aggrandizement or pyramid-building purposes and are in fact contemptuous of professionalism.

For a long time they have used the word "delivery" in papers and discussions on health care. They propose mass medication concepts long before 1984 and discount the professional's concern for the needs of the individual as if this concern can be expressed in computerized rendering of dental care to clones.

One of the most successful efforts against professionalism has been their ability to persuade medical and dental professionals to use the word "delivery." Our acceptance is a mark of their achievement of brainwashing dental professionals into believing professionalism is on the way out. I refuse to succumb to their machinations.

I hope we can make every effort to reverse this trend and return professionalism to the status it deserves. One of the first acts in this respect should be to remove the word "delivery" from dental vocabulary and return it to mail routes where it belongs.

Donald Rife, D.D.S.
Willowdale, Ont.,
past president,
Canadian Dental Association

The following is a response to a recent letter from Dr. A.C. Ahrens of Medicine Hat, Alberta (Journal, May, 1979) in which Dr. Ahrens states his objections to the substance of the brief presented by the Canadian Dental Association to the Standing Committee on Banking, Trade and Commerce concerning the Federal Government's proposed Bill C-37.

Tax cuts not issue

Dear Dr. Ahrens,

Concerning your letter of objection to CDA's brief on Bill C-37 and its ramifications for the dental profession, I would like to point out that the Canadian Dental Association is not after "sizeable income tax cuts, preferred interest rates, lower equity demands" as you suggest. CDA merely linked up with other professionals such as physicians and lawyers in this instance to insist upon fair and equitable treatment under federal tax law.

The over-riding issue arising from the proposals within the Bill relate not only to the right of dentists and other professionals to incorporate if they so wish and qualify for tax deductions available to small businesses, but also to the notion that what is fair for some professions is also fair for others.

It is difficult to understand the reasoning of your statement that if the Government reconsiders Bill C-37 "reverse discrimination will occur where members unable or unwilling to incorporate would be forced to pay up to 50 per cent more government tax."

The decision to incorporate is a matter of choice depending on provincial law. As a dentist practising in the province of Alberta, you may presently incorporate as a small business. Bill C-37 as proposed, would over-ride that right until and unless all other Canadian provinces open their doors to such a law.

The full argument of CDA's position appears in the Journal (April, 1979). Not only were the tax propo-

sals discriminatory against a certain few, but little, if any, time was made available for the professions concerned to make representation to those developing the Bill. In other words, CDA objected not only to the content of the Bill but also to the manner in which it was prepared. No time was given before the proposed implementation of the amendments for an analysis of the changes.

The Senate Committee itself supported the points raised by CDA spokesmen. The act of singling out dentists, lawyers, medical doctors and accountants as particular professionals not permitted to incorporate is in itself "arbitrary and discriminatory," said the Senate report.

The committee also noted that where professionals are permitted to incorporate under provincial law they should be entitled to the small business tax deduction.

Your views are well-taken, but it remains that the Canadian Dental Association could not stand idly by while the tax rights of dentists were being significantly altered in a discriminatory manner and without prior consultation. If allying with other professionals is the best way to make a forceful statement, CDA owes that action to its membership.

Rod Moran, D.D.S.
president,
Canadian Dental Association

Journal in demand

The Journal of the American Dental Association regularly has a page called "Commentary" which consists of portions of relevant articles and editorials from other journals.

I would like to use the editorial "Oral Health — An Aspect of Total Health" which appeared in the March issue of the *Journal of the Canadian Dental Association*.

Roger H. Scholle, DDS, MS
editor, Journal of the
American Dental Association

Early patient referral

I am writing to share, with the readers of the Journal, my recent experience with post-mandibular block trismus. In the past three or four years, I have seen a total of four patients presenting following mandibular block injection for routine dental treatment. The patients all gave a similar story.

The dentist concerned in each instance administered a routine mandibular block without satisfactory effect. A second, and in one case, a third injection was given over the next few minutes and the appropriate dental treatment administered. The patients all noticed marked limitation of opening the following day and in each instance presented to me from three to six weeks later. In two instances, the patients had noted unusual swelling of the affected side of the face and in one instance the patient had noted ecchymosis of the side of the neck the day following the injection. All patients presented with measured interincisal opening distances of approximately 1 cm.. In each instance I carried out manipulation of the jaw under general anaesthesia and in each case the fibrous adhesions present could be heard tearing. All patients were placed on a post-operative regime of passive stretching exercises and all returned to normal function both qualitatively and quantitatively.

On the basis of the above experience, I would like to make a plea for an early referral of patients with this clinical picture. I think it is not inconceivable that severe and permanent extra-articular temporomandibular ankylosis might supervene and surgical correction be the only alternative to this relatively simple and effective treatment of manipulation.

G. Allan Taylor,
D.D.S., M.D., F.R.C.S. (C)
Ottawa, Ontario

ADA reaches temporary agreement with FTC in anti-trust suit

A temporary agreement between the U.S. Federal Trade Commission and the American Dental Association marks the end of a two-year court battle. The Commission's complaint charged the ADA and several regional dental societies with violation of federal anti-trust laws by restricting advertising by dentists. These restrictions, it was argued, reduced competition among dentists and harmed consumers.

As a result of a tentative settlement in the anti-trust suit, dentists across the United States have been freed from restrictions on advertising.

According to the agreement between the American Dental Association and the Commission, final settlement of the case depends on the outcome of a similar suit against the American Medical Association (AMA). Until then, the 130,000-member Dental Association has agreed not to restrict or declare unethical "truthful" advertising by dentists.

The AMA is currently appealing a 1978 decision that it conspired to restrict competition among physicians with its regulations on advertising. Because the legal issues regarding advertising and solicitation in the ADA suit closely parallel those in the FTC suit against the AMA, the ADA has further agreed to abide by the final court ruling in the AMA case as it applies to advertising and solicitation of patients and FTC jurisdiction over not-for-profit associations of health professionals.

The full terms of the proposed settlement will be placed on public record for 60 days and published in the Federal Register for public review and comment. FTC commissioners will then make a final decision on the ADA agreement.

In Canada, the Combines Act of 1976 indicates that dentists are permitted to advertise, providing their advertisements are "truthful." "Truthful" means dentists will not misrepresent themselves and their qualifications to the public as specialists, for example, unless they have accreditation in a particular specialty.

Section 15 of the existing CDA Code of Ethics, almost ten years old now, states "All direct or indirect use of publicity, advertising and solicitation are unethical." However, in Canada, any action taken in

respect to questionable advertising has traditionally been within the jurisdiction of the provincial licensing bodies.

The Canadian Dental Association Code of Ethics is presently in the final stages of revision to move into harmony with the 1976 federal legislation. The draft of the new code was initially presented to the Board of Governors at the March meeting and may be approved at the CDA Annual Meeting in September in Quebec City. Combines representatives have also been made aware of the proposed changes.

Periodontists elect new executive members

A combined meeting of the Canadian Academy of Periodontology and the Ontario Society of Periodontists was held May 4 and 5 in Toronto.

Dr. Richard Ten Cate, dean of the Faculty of Dentistry at the University of Toronto lead off the scientific program with his discussion of the development of the periodontium. He is reported to have introduced new insights into the histology and development of the periodontal tissues.

On the second day of the meeting, Dr. Clifford Oschbein, a well-known periodontist from Dallas, Texas, spoke on periodontal surgery.

Both the national and provincial societies held annual meetings during the Toronto gathering and new executives were elected.

The Canadian Academy of Periodontology executive includes, Dr. Sam Borden, Winnipeg, Manitoba, past president; Dr. Fred Muroff, Montreal, Quebec, president; Dr. Gordon Pentz, Armadale, Nova Scotia, president elect; Dr. Frederick Lackie, Toronto, Ontario, secretary-treasurer.

The Ontario Society of Periodontists elected Dr. Steven Richmond president. Past president is now Dr. Stan-

ley Rosen and the new president elect is Dr. Michael Litchen. Dr. Robert Turnbull (scientific editor of the Journal of the Canadian Dental Association), is secretary-treasurer and Dr. Len Diamond is the Society's program chairman.

New pamphlet available

The latest pamphlet from the Canadian Dental Association, a consumer information brochure on prepaid dental plans, is now available. A sample of the pamphlet is attached here. The pamphlet outlines the responsibilities of the patient in the operation of prepaid dental plans. It says what dental services are covered by most dental plans and briefly describes what treatment is usually excluded. The pamphlet emphasizes that only the dentist can determine the degree of dental care required and only the patient can authorize treatment.

Pamphlets are available from the Canadian Dental Association, 1815 Alta Vista Drive, Ottawa, Ontario, K1G 3Y6.

prepaid



dental insurance



The consumer

You, the consumer, are responsible for your own dental health. But there are aids along the way to good oral health. Your dentist offers comprehensive, professional dental health care. Your insurance company provides assistance in paying for this care.

But, ultimately, personal dental health is your responsibility.

The Canadian Dental Association and prepaid dental insurance plans

The Canadian Dental Association represents the Canadian dental profession and Canadian dentists. Along with the Provincial dental associations, CDA can help you, the consumer, by maintaining the professional standards required for quality dental care.

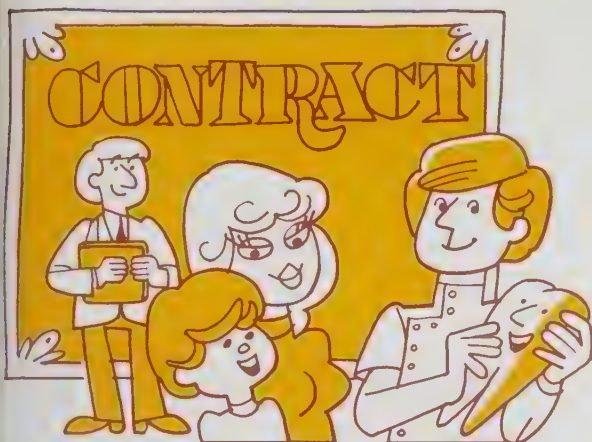
Because of the increasing awareness of the importance of good oral health, prepaid insurance plans are becoming more popular. More and more people are seeing dentists for preventive dentistry and instruction on maintaining good dental health.

The Canadian Dental Association supports the concept of prepaid dental plans because their use will result in a marked improvement in the dental health of many Canadians, young and old alike.

The CDA, along with its Provincial counterparts, wants you to be aware of the rights and responsibilities which prepaid dental insurance plans provide. This information brochure has been prepared by the CDA as your consumer's guide to dental insurance.

The brochure has been written in layman's language so that consumers can obtain a general understanding of prepaid dental plans. This brochure then, is not a legal contract and its contents should not be construed as binding on dentists, insurance companies or third parties. The only legal contract covering a prepaid dental plan is that which exists between the insurance company and you or your employer.

It is important that *YOU* read the information pamphlet the insurance company provides with your plan. This information will help you make full use of your plan.



The basic rules of dental insurance

Relationships

- Your prepaid dental insurance plan is a contract between YOU and YOUR INSURANCE COMPANY
- Care and treatment provided to you is a contract between YOU and YOUR DENTIST
- The dentist DOES NOT have a contract with the insuring body.

Responsibilities

- Only YOU can authorize treatment and YOU are responsible for the payment of all fees related to that treatment.

Normally YOU pay the dentist and YOUR INSURANCE COMPANY will repay you according to the terms of your contract with them.

Your dentist will, within certain guidelines, help you receive the benefits to which you are entitled under the terms of your contract.

Benefits

Dental plans are written to fit the varied needs of specific groups. Therefore, a plan's benefits and the premiums charged to pay for them vary widely.

IT IS IMPORTANT THAT YOU READ THE INFORMATION BROCHURE ON YOUR PLAN CAREFULLY.

Your dentist cannot be expected to be an authority on the precise benefits offered by the many different plans available. Questions about the benefits on an existing policy are best answered by the administrator of your group policy. (His or her name should be in the plan's brochure: If not, ask your employer or the insurance company.)



What is covered

Most plans cover, partially or completely, a wide range of BASIC DENTAL SERVICES. This coverage is usually extended to you and your family.

The services generally included are: dental examinations, x-rays, the scaling and cleaning of teeth, preventive services, fillings, crowns and other restorations, extractions, other types of oral surgery, and the treatment of diseases of the gums and bone supporting the teeth.

Also, most plans cover, under a varying percentage of reimbursement, dentures and fixed and removable bridges.

Orthodontic care can be included if the original purchasing group desires it. An orthodontic specialist is concerned with the detection, study, prevention and correction of irregularities in tooth position and jaw relationship and deformities of the face produced by these conditions.

What is not covered

Nearly every plan excludes the cost of dental treatment for cosmetic purposes, and contains other clauses which you should read carefully.

One is called a deductible clause. An employee pays an initial, specified amount annually for dental services (frequently \$25 per person or \$50 per family). Amounts beyond the "deductible" are paid for, in whole or in part, by the dental plan.

After the deductible has been paid, many plans pay the full cost or a percent of the basic dental services covered under the contract, and a lower percent of major restorative and orthodontic expenses. This is called "co-insurance."

The insurance company's role

The insurance company is the financial and administrative agent for your group plan.

Neither the insurance company nor your employer can determine the degree of dental care you need. The dentist is responsible for such professional recommendations. Neither the insurance company nor your employer can choose your dentist. Only YOU have that right.

How your dentist can help you

To help you obtain all the benefits offered by your plan the dentist will, at your request and without charge:

- Give you a written standard dental treatment plan form. This can be submitted in advance to the insurance company before treatment begins. You will be advised by the company of the approximate dollar amount or percentage of your claim for which the insurance company will assume responsibility.



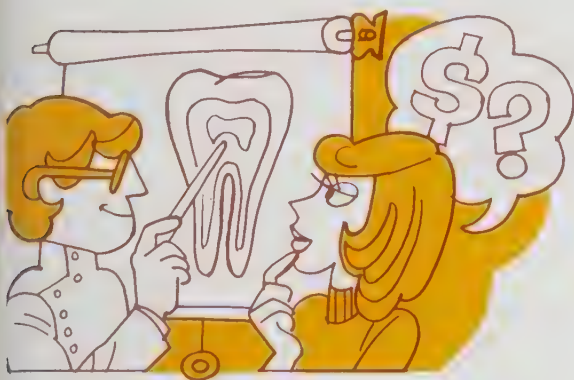
- The dentist will complete your insurance company's CDA/Provincial Dental Association standard dental claim form at monthly intervals or when the treatment is completed. You are responsible for submitting this form to the proper source as indicated in your plan's brochure.
- The dentist can respond directly to the insurance company upon its request, providing supplementary information to questions which have been approved by the Canadian Dental Association or your Provincial Dental Association.

Requests for information beyond that outlined above, or, additional time required to fill out forms which are not approved by CDA or your Provincial Dental Association, add to the clerical load of a dental office. If these additional services are requested by the insurance company, an appropriate fee will be assessed.

Dental fees

Most plans have some provision that limits payment by the insurance company. The remainder must be paid by the patient - you. For these services covered by your plan, most insurance companies base their reimbursement to you on the suggested guide for dental fees outlined by the Provincial dental association.

However, in many cases the suggested guide used by the insurance company may not be that of the suggested guide for the current year. In many cases as well, a dentist's fee will differ from the suggested current guide because of circumstances which vary with individual cases, the nature of work required, or because different fees have been established by the individual dentist.



The dentist and you

Just as questions about your coverage are best directed to your plan administrator or insuring company, so questions about dental treatment or fees should be referred to your dentist.

Your dentist wants you to have a clear understanding of the treatment being prescribed and the fees involved. The dentist is prepared to discuss alternative treatment plans. Remember you can be a wise consumer in the dental office. Never hesitate to ask about treatment or fees.

Frank conversation between dentist and patient is the foundation of a solid dentist-patient relationship. On occasion, and in spite of all good intentions, a misunderstanding may occur. Regardless of the nature of the problem, remember that you should first make your feeling clear and known to the dentist.



A checklist to using your prepaid dental plan

- Check with your employer to see if you are in a plan.
- Have your employer or insurance company explain your coverage.
- Read your plan's brochure.
- Select the dentist of your choice.
- When treatment is required you may have an estimate prepared in advance.
- Submit the standard dental treatment form completed by your dentist according to the instructions in your plan's brochure. Because plans vary, this may or may not be a necessary step.
- The insurance company will advise what portion of your total account they will pay.
- Have your dental treatment.
- Pay the total amount to the dentist yourself.
- Submit the approved standard dental claim form, filled out by your dentist, to your employer or the insuring company.
- In most cases a cheque will arrive shortly repaying you for the benefits provided in your plan.

n summary

our dentist and your insurance carrier share a common concern for your dental health but, remember, personal dental health is YOUR RESPONSIBILITY.

y visiting a dentist regularly you and your family can prevent extensive dental treatment. Many insurance programs recognize the value of regular visits to a dentist.

ecome familiar with your plan and use its benefits.



Canadian Dental Association

1815 Alta Vista Drive
OTTAWA, Ontario, Canada
K1G 3Y6

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Une nouvelle brochure

L'Association Dentaire Canadienne vient de publier une nouvelle brochure sur l'assurance dentaire, dont un échantillon figure en annexe. Cette publication donne un aperçu des responsabilités du patient dans le cadre des plans d'assurance dentaire. Elle mentionne les services dentaires couverts dans la plupart des plans et décrit brièvement les types de traitement habituellement exclus.

On peut se procurer des exemplaires de cette brochure auprès de l'Association Dentaire Canadienne, au 1815 promenade Alta Vista, Ottawa, Ontario, K1G 3Y6.

Janet Langley: accountant and office manager

Janet C. Langley, accountant and office manager at the Canadian Dental Association's headquarters in Ottawa, learned the ropes of the accounting field working for a management company in Halifax, Nova Scotia. Prior to joining the staff at CDA as accounts assistant in January, 1978, she had been employed as an assistant in the area of telecommunications and marketing. Mrs. Langley was promoted to her present position in September of last year.

Mrs. Langley has two sons; Jackson, age seven and four year old Adrian. She has travelled extensively in Europe and South America and has lived in Ottawa for three years.

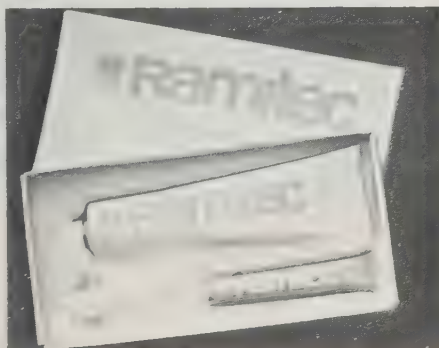
Everything from managing a staff

of four to feeding payroll information into a computer falls within Mrs. Langley's "job description." She supervises the accounting functions, pulls monthly financial statements and coordinates employees in the Records Department where computer records are maintained and updated.

CDA's computer conversion has been this business-woman's life for the last six or seven months. "It's a whole new ball of wax," said Mrs. Langley of CDA's technological switch to a computer. "My predecessors conducted the initial design legwork but since my arrival we have been working on expanding the system and stream-lining functions at the same time."

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That's Ramitec, the new bite registration system that gives you perfect impressions every time.

Ramitec's firm elastic bite registration delivers precise details of occlusal surfaces and borders.

From Ash Temple, this new polyethers bite system is easily mixed from two pastes and is applied conveniently with the Ramitec application syringe.

You can end problems of shifted occlusions with Ramitec because it allows pressure-free closure while setting quickly in the mouth on wet or dry tooth surfaces.

The finished impression can then be used as an accurate working basis for the laboratory or, because it is not sensitive to either heat or pressure, can be stored for later use.

Ask the Ash Temple representative about Ramitec so that you can get perfect registrations first time — every time.

IN THE NEWS

Therapy for cleft palate victims

HALIFAX — A cleft palate rehabilitation team of plastic surgeons, dental surgeons, prosthodontists and a speech pathologist in Halifax is making life more pleasant for both children and adults who are victims of the oral malady. The group works out of the Nova Scotia capital's Izaak Walton Killam Hospital for Children.

Dr. Edward Hannigan, chairman of the Society of Dental Specialists of Nova Scotia, recently reported that over the past two years three

adults who had been told their cases were hopeless in other medical centres were successfully treated by the East Coast team. After surgery and speech therapy, all three demonstrated a new level of self-confidence and an ability to communicate and eat more easily.

According to Dr. Hannigan, the rehab team works towards retaining the patients' original teeth primarily because cleft palate victims are unable to wear conventional dentures. Cleft palate corrective surgery should begin at the infant stage because even as babies the problem of being able to eat properly is serious.

Dr. Hannigan's comments were made in conjunction with a recent seminar in Halifax that dealt with cleft palate problems.

Dentists' role important in early cancer detection

WINNIPEG — University of Manitoba specialist, Dr. Donald Proctor, made the news recently discussing the role of dentists in early detection of cancer of the mouth. Dr. Proctor is with the university's faculty of dentistry.

Considered one of the most curable of cancers if diagnosed and treated in its early stages, oral cancer statistics indicate that if left undetected the disease kills 70 per cent of its victims in five years.

Within the last decade, said Dr. Proctor, dentists have made a point of checking the whole oral cavity rather than looking only at teeth. They are, therefore, in the best position to find cancerous growths early. At the University of Manitoba, said Dr. Proctor, dental students are taught how to recognize tumours. Dentists now conduct biopsies on suspicious looking growths or refer the patient to a physician for treatment.

Lip cancer can be mistaken for a cold sore and white lesions inside the mouth should be tested if they continue more than two or three weeks. According to Dr. Proctor, 40-year old and older pipe and cigar smokers are prime targets for oral cancer.



Dr. Gary E. Pitkin

Dr. Gary Pitkin takes ODA presidential office

Dr. Gary E. Pitkin is the new president of the Ontario Dental Association. Dr. Pitkin took office last month during the ODA Board of Governors meeting in Toronto. Dr. Bradley W. Holmes of Kenora is the new president-elect of the association.

Dr. Al MacLeod and Dr. Yves Tellier: Editorial Board members

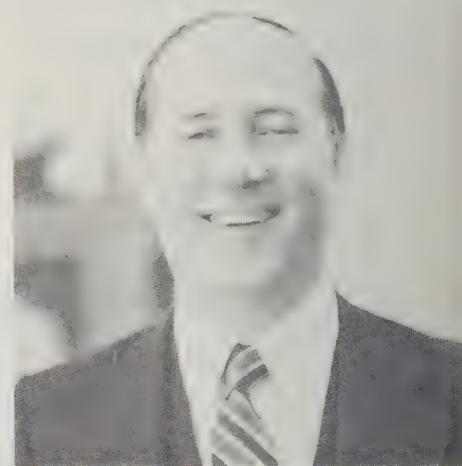
For the information of Journal readers, members of the publication's Editorial Board are being introduced.

Dr. Al MacLeod, former chairman of the Ad Hoc Committee to Study the Journal, is applying this background as chairman of the Editorial Board of the Canadian Dental Association's publication. Dr. MacLeod also chairs meetings of the Council on Information Services.

A graduate of Glasgow University, Glasgow, Scotland with a B.D.S., Dr. MacLeod earned his D.D.S. at Dalhousie in Halifax. He has a masters degree from the same University and an M.Sc. in behavioural sciences from Harvard.

Dr. MacLeod practised in partnership with his father, Dr. Al MacLeod, Sr., for several years prior to his post graduate studies.

An associate professor of dentistry at Dalhousie, Dr. MacLeod teaches



Dr. Al MacLeod

courses in practice management and dentist/patient communication. He manages a clinic, the Medical Arts Dental Group and maintains a part-time general practice close to the University.

Dr. MacLeod lives in Halifax with his wife Pat and two children, 16 year old Fiona and Iain, 15. He is an enthusiastic golfer and also enjoys swimming.

CDA successful in standard dental claim form negotiations

A Standard Dental Claim Form to be used across Canada has been approved by the Canadian Dental Association after lengthy negotiations with the Canadian Association of Accident and Sickness Insurers (CAASI).

With the acceptance of the CDA Board of Governors last year, CAASI spokesmen have agreed to move inventory of old stock and initiate use of new forms as soon as possible. CDA representatives met with CAASI in April.

Dr. Rod Moran, CDA president, described on-going negotiations with CAASI as complex.

"What happened in the past is that provincial associations were negotiating with CAASI and other carriers on an individual basis until the procedures became too complicated to manage effectively. The

Canadian Dental Association noticed that different deals were being made with different associations and began to pull the separate bits of information together with the help of the provinces," said Dr. Moran.

Policies and procedures

CDA's work came together in 1976 and the result is a set of guidelines on policies and procedures dealing with prepaid dental plans. The CDA proposals do not supersede provincial recommendations, Dr. Moran emphasized. They do, however, standardize prepaid dental plan forms.

Dentists provide the completed CDA-approved Dental Claim Form to the patient as evidence of performed services to the third party carrier. They also agree to provide

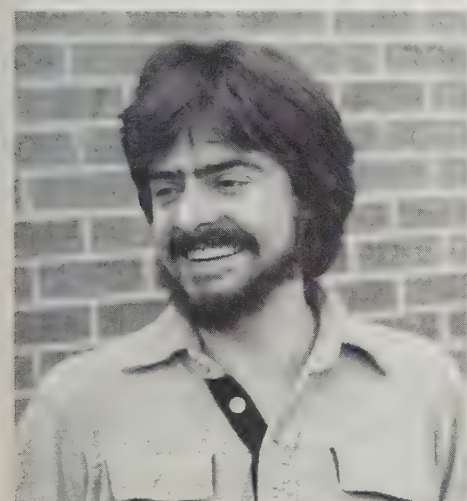
Supplementary Information, according to CDA policy and procedure, when a request comes directly from the carrier to the dental office and not through the patient. Although the format of the Supplementary Information Form may differ with various third party carriers, only questions on the CDA-approved Supplementary Information Form should be answered, points out the manual.

Through negotiations over the last several years, CDA and CAASI have reached agreement on a Dental Treatment Plan Form and a Supplementary Information Form as well as the Dental Claim Form.

"One advantage of the Standard Dental Claim Form, for example," said Dr. Moran, "is that it can be filled out by staff, making office administration more efficient." The dentist maintains ultimate responsibility for its contents with his signature.

The process of coming to a point of agreement on a system mutually beneficial to the public and the profession has been involved, but the publication of CDA Policies on Prepaid Dental Plans and Guide on How to Complete Dental Claim Forms should be made available to the dentists across the country this year, said Dr. Moran.

members are introduced to Journal readers



Dr. Yves Tellier

Dr. Yves Tellier, executive liaison to the Council on Information Services and to the Editorial Board of the Journal is a specialist in paedodontics with a practice in Montreal — at least for the time being. Next month he will be returning to school to do post graduate studies in orthodontics at the University of Montreal. He will maintain his work in paedodontics on a part-time basis.

Dr. Tellier graduated from Collège Jean de Brébeuf in Montreal with a B.A. in 1965 and left the University of Montreal with a D.D.S. in 1969. In 1971 he received a Masters in paedodontics from the University of Illinois. He and his wife Suzanne have two children, Julie-Anne, four, and Alexandre, almost two years old.

An avid antique collector over the last 12 years, Dr. Tellier is also a sometime photographer. His coup d'éclat is a full length feature sound production of his recent mountain climbing expedition to Nepal.

Dr. Tellier carries his training as a dentist into another of his hobbies, woodworking. He has been told he carves a piece of wood as carefully and with as much precision as if it were a tooth.

In what 'spare time' he has left, Dr. Tellier enjoys cycling in the hills around his home in St. Hilaire and scuba diving.

NOTICE is given of the CDA Board of Governors meeting September 8 and 9, 1979 9 a.m.

Auberge des Gouverneurs
Quebec City

AVIS: Réunion du Conseil des gouverneurs de l'ADC les 8 et 9 septembre 1979

0900 heures.
Auberge des Gouverneurs
Ville de Québec

IN THE NEWS

CDA Retirement Savings Plan

Unit values of the Canadian Dental Association's Retirement Savings Plan stood as follows on April 30, 1979:

<i>Common Stock Fund</i>	\$41.306
<i>Fixed Income Fund</i>	\$22.368
<i>Guaranteed Fund</i>	\$15.718
<i>Balanced Fund</i>	\$11.681

Total assets (market value) of the plan were \$34,334,008.19.

The previous month's figures, as of March 31, 1978, stood as follows:

<i>Common Stock Fund</i>	\$41.133
<i>Fixed Income Fund</i>	\$22.064
<i>Guaranteed Fund</i>	\$15.460
<i>Balanced Fund</i>	\$11.659

Total assets (market value) of the plan were \$34,619,934.24.

For further information write to:

CDA-sponsored Pension and Insurance Plans, 234 St. George Street, Toronto, Ontario M5R 2P2.

24-hour dental service for foreign seamen

HALIFAX — A new service offering medical and dental care to foreign sailors has opened in Halifax.

The firm behind the operation is Ship Professional Services Ltd. Company president, Don MacLeod, with more than 20 years experience in the steamship industry, has modelled his program after two others already operating in St. John, New Brunswick and Montreal, Quebec. Ship Services Ltd. runs the health care agencies in both the Quebec and New Brunswick locations. The two companies are not related financially, in spite of the similarity of names.

According to MacLeod, the need for a company to set up and arrange medical and dental services for seamen arose after the Federal Government closed down its Sick Mariners' Services in Canadian ports in 1970. The Montreal group immediately swung into action.

When the Mariners' Clinics closed in Halifax, foreign seamen were sent to local hospitals, most frequently Victoria General where the immediate demands of the sailors put a strain on the facilities of the Out Patients' Department. "Because the ships are in and out of the harbour so quickly," said MacLeod, "when seamen come ashore they need to be looked at immediately." Ship Profes-

sional Services Ltd. will take the bulk of that traffic in Halifax and funnel patients through their own 24-hour service.

MacLeod has received a pat on the back and a smile from Dr. Miller, deputy minister of Health in Nova Scotia for his initiative but the financing of plan is coming from ship owners or shipping agents. All billing for services is put through MacLeod and he pays the dentists and doctors, taking an administrative load off hospitals.

Since the end of January, MacLeod has referred patients to the Medical Arts Dental Group in Halifax and his plan is to open a company-run medical clinic in the near future. He is in the process of hiring office staff and is looking for retired sea-going medical personnel who know the sea, what kind of accidents occur and have relevant medical experience.

MacLeod is not certain what kind of a patient load Ship Professional Services can expect but he estimates 1,000 non-Canadian ships a year are in port and about four patients per ship now receive care in Halifax. On two occasions, however, he went dockside to pick up two ill seamen and once found himself taking 17 into Halifax for treatment and the second time ended up with the whole crew.

Mouth guards essential — all sports hazardous

In a recent article, "Mouth Protection in Sports," Dr. William Heintz, professor of dentistry and consultant to the Department of Athletics at Ohio State University, directly attributed the prevention of "hundreds of thousands of sports injuries to the mouth and jaws" to the use of well-fitted mouth guards. He suggested that physicians and dentists should use the example of this high standard in hockey and football in promoting safety gear in other sports.

The Canadian Amateur Hockey Association has made the use of helmets, face guards and mouth protectors mandatory. A custom-fitted mouth guard of dental vinyl, made over a model of a dentist's impression of the athlete's teeth and jaws offers the best and most comfortable protection.

A well-designed mouth guard is durable and when properly fitted, is able to sustain an impact that might otherwise cause severe jaw or brain injury.

The worst type of mouth guard is the boxer-style version of moulded rubber and usually available in only one size.

In Canada, the CSA-approved hockey helmet is made of clear plexiglass or a cage-like mask with separately fitted lower face protector. As of this year, the Amateur Hockey Association of the United States requires players to wear either a full face mask or an eye mask with external mouthpiece.

As recently as 1978, Dr. David Millman, consultant in plastic and reconstructive surgery at Scarborough Centenary Hospital in Scarborough, Ontario, reported orofacial injuries to be on the upswing in the 11 to 18 year old age bracket. CAHA

see page 280

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A completely versatile machine for both crown and bridge and denture applications. The built-in timer and precise heating and cooling specifications of all disk materials eliminate guesswork, assure consistent quality.

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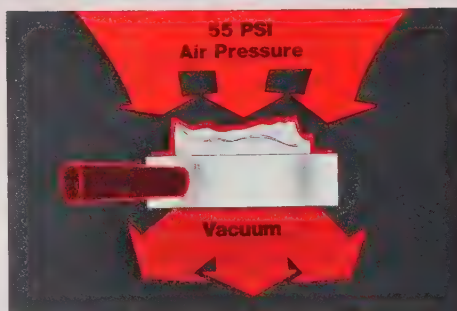
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Une entente temporaire marquant la conclusion d'une lutte juridique

Une entente temporaire marquant la conclusion d'une lutte juridique de deux ans vient d'être conclue entre la U.S. Federal Trade Commission et l'American Dental Association. La commission améri-

caine avait accusé l'ADA et plusieurs sociétés dentaires régionales d'avoir enfreint les lois fédérales contre les trusts en restreignant la publicité par les dentistes. L'accusation alléguait que ces restrictions empê-

chaient une saine concurrence entre les dentistes et, de ce fait, portait préjudice au consommateur.

Le règlement provisoire de la poursuite antitrust se traduit par la suppression des restrictions sur la publicité par les dentistes américains.

Selon les termes de l'entente conclue entre l'American Dental Association et la Commission, le règlement définitif de la cause dépendra du résultat d'une poursuite semblable intentée contre l'American Medical Association (AMA). Dans l'intervalle, l'association dentaire américaine, qui compte 130,000 membres, a accepté de ne pas restreindre la publicité "honnête" par les dentistes, ni de la déclarer contraire à l'éthique professionnelle.

Pour sa part, l'AMA fait actuellement appel d'une décision, prise en 1978, à l'effet qu'elle aurait conspiré en vue de restreindre la concurrence entre les médecins en imposant des règlements sur la publicité. Puisque les questions juridiques touchant la publicité et la sollicitation soulevées dans la poursuite contre l'ADA sont très semblables à celles invoquées dans la poursuite de la FTC contre l'AMA, l'ADA s'en engagée à se soumettre à la décision finale du tribunal dans la cause relative à l'AMA pour ce qui est de la publicité et du recrutement de la clientèle, en plus de reconnaître la juridiction de la FTC sur les associations sans but lucratif de professionnels de la santé.

Les termes du règlement envisagé seront inscrits dans les registres publics pour une période de 60 jours afin de donner au public l'occasion de faire connaître ses vues. Les commissaires de la FTC prendront ensuite une décision définitive quant à l'entente avec l'ADA.

La Loi sur les coalitions, promu-

suite à la page 280

Les négociations ont été très complexes

Au terme de négociations ardues avec la Canadian Association of Accident and Sickness Insurers (association canadienne des compagnies d'assurance-accident et maladie), l'Association Dentaire Canadienne a approuvé un formulaire standard de réclamation de frais dentaires.

À la suite de l'accord exprimé l'an dernier par le Conseil d'administration de l'ADC, les porte-parole de CAASI ont accepté dès la réunion d'avril de mettre en circulation le plus tôt possible, les nouveaux formulaires.

Selon le président de l'ADC, le Dr Rod Moran, les négociations avec la CAASI ont été très complexes.

"Dans le passé, explique-t-il, les associations provinciales concluaient des ententes individuelles avec la CAASI et les autres assureurs, de sorte que de telles ententes se sont multipliées et diversifiées au point de devenir impossibles à administrer. L'Association Dentaire Canadienne a donc résolu, avec l'aide des provinces, de mettre de l'ordre dans ce fouillis."

Le travail entrepris à cette fin par l'ADC est arrivé à terme en 1976, sous forme d'un ensemble de lignes de conduite exposant les politiques et règlements relatifs aux plans d'assurance dentaire. Le Dr Moran insiste toutefois sur le fait que les propositions de l'ADC n'annulent pas les recommandations provinciales. Par contre, elles normalisent les formulaires de réclamation des plans d'assurance dentaire.

Les négociations menées au cours des dernières années entre l'ADC et la CAASI ont donné lieu à une entente sur un formulaire descriptif de plan de traitement, ainsi que sur une fiche de renseignements additionnels, outre le formulaire de réclamation.

Le dentiste remet à son patient, à l'intention de l'assureur, le formulaire approuvé par l'ADC, après l'avoir dûment rempli. Le dentiste s'engage également à fournir, conformément aux politiques et règlements de l'ADC, les renseignements supplémentaires requis par l'assureur quand ce dernier lui fait directement la demande sans passer par l'intermédiaire du patient. Le manuel précise que le dentiste n'est tenu de répondre qu'aux questions figurant sur la fiche de renseignements supplémentaires approuvée par l'ADC, même si la présentation du formulaire de demande de renseignements supplémentaires peut varier selon les assureurs.

Le processus qui a mené à la mise au point d'un système avantageux tant pour le public que pour le corps professionnel s'est révélé ardu, ajoute le Dr Moran, mais dès cette année l'ADC doit produire à l'intention des dentistes deux publications, soient "Directives de l'ADC concernant les plans d'assurance dentaire et le guide sur la façon de remplir les formulaires de réclamation."

LES ACTUALITÉS

La détection du cancer — le rôle des dentistes

WINNIPEG — Un spécialiste de l'Université du Manitoba, le Dr Donald Proctor, a vu ses commentaires sur le rôle des dentistes dans la détection précoce du cancer de la bouche faire les nouvelles. Le Dr Proctor appartient à la faculté de dentisterie de cette université.

Bien que le cancer de la bouche soit considéré comme l'un des plus faciles à guérir, s'il est diagnostiqué et traité dès le début, les statistiques révèlent qu'il tue 70 pour cent de ses victimes en cinq ans.

Depuis une dizaine d'années, selon le Dr Proctor, les dentistes ne manquent pas d'examiner toute la cavité buccale, et non uniquement les dents. C'est grâce à cette précaution qu'ils peuvent déceler les excroissances cancéreuses dès leur début.

Des biopsies

Le Dr Proctor précise que les étudiants de dentisterie à l'Université du Manitoba apprennent à identifier les tumeurs. Dorénavant, les dentistes font des biopsies de toute excroissance de nature douteuse, ou encore envoient leur patient chez un médecin.

On peut parfois prendre le cancer de la lèvre pour un ulcère dû au rhume. En outre, toute lésion blanche à l'intérieur de la bouche devrait être soigneusement examinée si elle persiste plus de deux ou trois semaines. Selon le Dr Proctor, les principaux candidats au cancer de la bouche sont les fumeurs de pipe ou de cigare de 40 ans et plus.

Le Dr. Dâ Traves émet la suggestion que la fluoruration des eaux de consommation est peut-être un facteur dans la réduction du nombre de maladies cardiaques.

(Ref. F.D.I. Newsletter, Juillet, 1978, p. 27)



Janet Langley

Janet Langley

Administratrice du bureau de l'ADC

C'est à Halifax, où elle travaillait pour une firme de conseillers en gestion, que Janet C. Langley, nouvelle comptable et administratrice du bureau au siège social de l'ADC, à Ottawa, a pris de l'expérience dans toutes les facettes du domaine de la comptabilité. Avant de se joindre à l'Association Dentaire Canadienne à titre d'adjointe au service des comptes, en janvier 1978, elle avait oeuvré dans les secteurs des télécommunications et de la mise en marché. Mme Langley a été promu à son poste actuel en septembre dernier.

Ses tâches à l'ADC sont nombreuses et variées: supervision du personnel du bureau, préparation des chèques de paie, comptabilité, états de compte mensuels, coordination du travail du service des dossiers, ainsi de suite.

Depuis six ou sept mois, elle se consacre à l'automatisation des opérations du bureau. "Les ordinateurs sont un nouveau domaine pour moi, avoue Mme Langley. "Mes prédécesseurs avaient fait le travail de base, mais il s'agit maintenant de donner plus d'ampleur au système et d'en éliminer les problèmes."

Les plongeurs souffrent de maux de dents intolérables

ÉCOSSE — Pour certains, l'exploitation des réserves de pétrole sous le lit de l'océan représente de riches profits; alors que pour d'autres c'est plutôt un mal de dents lancinant.

Selon des rapports récents en provenance d'Écosse, les plongeurs travaillant à l'exploration des réserves de pétrole de la Mer du Nord souffrent de maux de dents intolérables et de la désintégration de leurs obturations dentaires au cours de leurs plongées.

Le Dr Norman Duthie, du département de prothèse dentaire à l'Université de Dundee, affirme que le problème provient de l'accumulation de pression causée par des gaz se déplaçant autour et à l'intérieur des dents. Une douleur intense peut se manifester à n'importe quel stade de la plongée, pendant la descente, la remontée ou même durant la décompression. Bien qu'il n'en soit pas encore certain, le Dr Duthie croit que la désagrégation douloureuse des obturations est due à des changements de la pression barométrique.

Un instructeur britannique de plongée sous-marine, William Soulsby, rapporte également avoir vu des plongeurs "se tordre de douleur". Selon M. Soulsby, l'air et les gaz s'accumulant dans les cavités dentaires ne se décompressent pas au même rythme que dans le reste du corps des plongeurs.

Un conseil aux plongeurs? Prenez bien soin de vos dents et consultez votre dentiste régulièrement.

Et quelle recommandation pourrait-on faire aux dentistes? Assurez-vous que les obturations faites aux plongeurs sont bien isolées, ne présentent aucune fissure et ne laissent aucune structure non supportée.

LES ACTUALITÉS



Dr Al MacLeod

Présentation du comité de rédaction aux lecteurs du Journal.

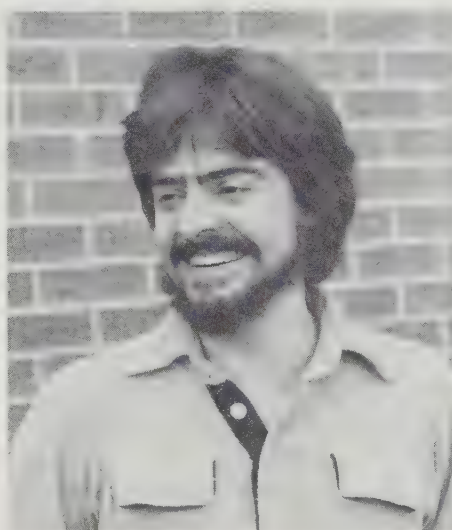
Le bureau éditorial: ... le Dr MacLeod

Le Dr Al MacLeod, après avoir présidé aux travaux du comité ad hoc sur la refonte du Journal, prend maintenant charge du bureau éditorial de notre publication mensuelle. Il continue toujours d'assumer la présidence du Conseil sur les services d'information.

Gradué au baccalauréat de l'Université de Glasgow en Écosse, le Dr MacLeod obtint son D.D.S. de l'Université Dalhousie à Halifax. Il détient aussi une maîtrise en sociologie de cette même institution en plus d'un M. Sc. en sciences du comportement de Harvard.

À titre de professeur associé à Dalhousie, le Dr MacLeod est chargé des cours d'administration et de relations dentiste-patient. Il administre par ailleurs une clinique, le "Medical Arts Dental Group" et continue à pratiquer sur une base partielle tout près de l'Université.

Al MacLeod habite Halifax avec son épouse Pat et ses deux enfants, Fiona, 16 ans et Iain, 15 ans. Il maintient sa forme en faisant un peu de natation et autant de golf que possible.



Dr Yves Tellier

... le Dr Tellier

Le Dr Yves Tellier, délégué de l'Exécutif auprès du Conseil sur les services d'information et attaché au

Bureau éditorial du Journal, était jusqu'à présent pédodontiste en pratique privé à Montréal. Le mois prochain, il retourne aux études à l'Université de Montréal pour se spécialiser en orthodontie. Pour l'instant, il entend poursuivre sa pratique de la pédodontie à temps partiel.

Le Dr Tellier a obtenu son B.A. du Collège Jean de Brébeuf en 1965 et son D.D.S. de l'Université de Montréal en 1969. Il est par la suite allé chercher une maîtrise en pédodontie de l'Université de l'Illinois. Sa femme Suzanne et lui ont maintenant deux enfants, Julie-Anne qui a 4 ans et Alexandre qui en aura bientôt deux.

La sculpture sur bois...

En plus d'être un collectionneur d'antiquités averti, le Dr Tellier est un photographe "éclairé". Son sommet en la matière, si l'on peut dire, est sans contredit le long métrage relatant son récent voyage d'exploration dans les montagnes du Népal.

Le Dr Tellier transpose sa formation de dentiste dans un autre de ses passe-temps, la sculpture sur bois. On a dit de lui qu'il taille une pièce de bois avec autant de soin et de talent que pour une dent.

Le Dr Tellier aime occuper les temps libres qui lui restent à pratiquer la plongée sous-marine ou même tout simplement à parcourir en vélo les collines qui entourent son domaine de Saint-Hilaire.

Le 'Medical Post' rapporte un cas de transplantation d'un os du pied (le 5e métatarse) ainsi que son articulation pour un patient que présentait une absence congénitale de l'articulation temporomandibulaire avec sous-développement de la branche montante de la mandibule. Après 21 ans, la fonction manducatrice est encore maintenue.

(Medical Post, Fév., 1979)

Régime d'épargne-retraite de l'ADC

Les valeurs respectives du Régime d'épargne-retraite de l'Association Dentaire Canadienne étaient les suivantes au 30 avril, 1979:

Fonds d'actions ordinaires	\$41.306
Fonds à revenu fixe	\$22.368
Fonds garanti	\$15.718
Fonds de placement équilibré	\$11.681

L'avoir total (valeur marchande) du régime s'élevait à \$34,334,008.19.

Au 31 mars, 1979, les chiffres du mois précédent étaient les suivants:

Fonds d'actions ordinaires	\$41.133
Fonds à revenu fixe	\$22.064
Fonds garanti	\$15.460
Fonds de placement équilibré	\$11.659
L'avoir total (valeur marchande) du régime s'élevait à	\$34,619,934.24.

Pour obtenir tout renseignement supplémentaire, prière de s'adresser aux: Régimes des rentes et d'assurances subventionnés par l'ADC, 234 rue St. George, Toronto, Ontario M5R 2P2.

CONVENTION

CDA Convention speakers cover variety of topics

All three days of scientific presentations at this year's Canadian Dental Association Convention will offer sessions in English, French and simultaneous translation.

Monday, September 10, is a typical day with Dr. Steven Wei leading off the lecture program with the first half of his paper, "Paedodontics and Prevention." Dr. Wei's discussion, presented in English and simultaneously translated into French, will conclude Monday afternoon. Dr. Denis Forest will also address convention delegates opening morning. Speaking in French, Dr. Forest will discuss "Dental Radiology." Dr. Robert Barrickman's address on "Facial Pain" will be presented in English at 10:30 a.m. Monday, immediately following Dr. Jean-Louis Bertrand, this year's Grieve Memorial Lecturer.

Summaries of scientific papers will continue to appear in the Journal until August, giving delegates an up-to-date account of speakers and presentations.

Dr. Pierre Desautels' paper, "Dental Materials," is the Monday afternoon French presentation and Dr. Bruce Larrick will speak in English on "Photography and Communication in Dentistry," at that time.

Tuesday morning, Dr. William Laney's discussion of "The Dentist in a Medical Institution" will be simultaneously translated into French as will Dr. Murray Bloom's afternoon lecture on "Computers in Dentistry." Dr. Paul Mercier heads up a team of researchers who authored a paper "The Resorption of Alveolar Bone." Their work will be presented in French during the morning and afternoon sessions on Tues-

day, September 11. Tuesday's English lecture, on "Periodontics," will be delivered by Dr. Philip Hoag.

Wednesday's simultaneously translated paper is scheduled to be presented by Dr. William Gilmore who will discuss "Operative Dentistry." Dr. Roger Masella will speak on "The Relation Between Fixed and Removable Prosthodontics" followed by Dr. Paul Jean whose presentation in French will deal with "Treatment Planning." Wednesday afternoon, Dr. Victor Legault will discuss "The Importance of Primary Dentition in Paedodontics." That day's English program includes a morning presentation by Dr. Carl Hawrish on "Differential Diagnosis and Management of Pain in Endodontics" and an afternoon session with Dr. A. Scheinin who will discuss the topic "Anticariogenic Product: Xylitol."



Just west of this great fortress, outside the walls, lies Battlefields Park, known historically as the "Plains of Abraham".

The Québec Museum, of Canadian paintings and other objets d'art, is open to visitors.

The city's Grand Théâtre, just a few blocks from the government complex on Boulevard Saint-Cyrille, features theatre and concerts and houses the Québec Conservatory of Music. It is the home of the Québec Symphony Orchestra.

CDA NATIONAL CONVENTION CONGRÈS NATIONAL DE L'ADC

Québec, P.Q., Sept. 9-12, 1979

Registration and hotel reservation forms are included at the back of this issue.

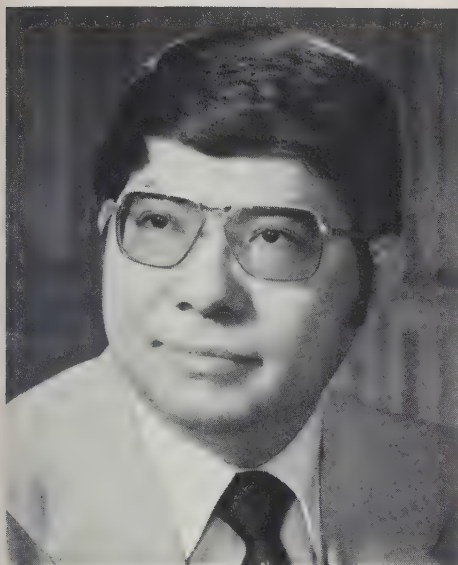
*Vous trouverez à la fin de ce numéro
une formule d'inscription et de réservation d'hôtel.*



directeur, Comité de l'inscription
Dr Claude Bussière
chairman, Registration Committee

**INSCRIVEZ-VOUS
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NOW**



Dr. Stephen H.Y. Wei

Wei: Advances in paedodontics

Dr. Stephen Wei, professor and head of the Department of Paedodontics, University of Iowa, earned a B.D.S. degree in dentistry from the University of Adelaide, South Australia, in 1961 and a D.D.S. from the University of Iowa ten years later. Dr. Wei has also studied and earned credentials at the University of Illinois, Chicago where he obtained a masters degree in histology and was a post-doctoral fellow in paedodontics.

In his presentation, "Advances in Paedodontics, Prevention and Fluoride Therapy," Dr. Wei will outline the advances in dental caries research emphasizing recent studies on the cariogenicity of foods. He will look at the techniques and philosophies of early infant care including dietary and nutritional counseling and the management of nursing bottle caries. Various aspects of preventive dentistry such as the use of pit and fissure sealants, advances in restorative techniques and direct bonding techniques will be presented.

Dr. Wei will also discuss advances in fluoride therapy including topical fluorides, rinses and fluoride supplements.

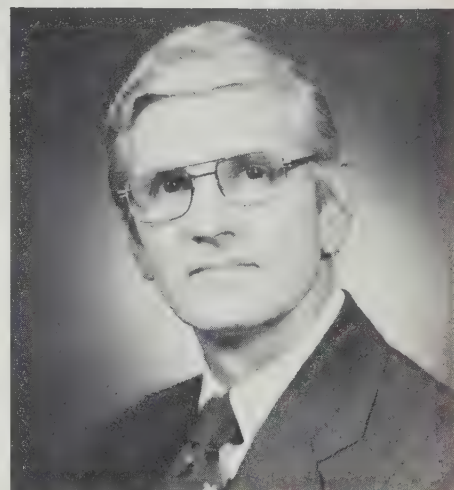
Laney: Dentists in hospital setting

Dr. William Laney, a prosthodontist with the Department of Dentistry at the Mayo Clinic in Rochester, Minnesota, is scheduled to speak at the Canadian Dental Association Convention on the "Role of the Dentist in a Medical Institution."

"In the current era of public and governmental preoccupation with the dental profession and what it should or should not be doing," says Dr. Laney, "our professional responsibilities in the care of the patient requiring dental treatment may need reassessment."

With a focus on the medical institution, Dr. Laney will discuss the interaction of dentists with medical colleagues and the involvement of services available in the hospital setting.

While clinical care, education and research all call for dentist participation, this presentation will deal with patient treatment related to medical and surgical problems with dental ramifications.



Dr. Wm. R. Laney

A graduate of the University of Oregon Dental School, Eugene, Oregon, Dr. Laney has a Master of Science degree in prosthodontics from the State University of Iowa.

Since 1960 he has been associated with the Mayo Clinic and is presently chairman of that institution's Department of Dentistry, a position he has held since 1976.

Dear Colleague,

In 1965, the Canadian Dental Association held its annual convention in Québec City. Again this year, September 9-12, the convention will be in Québec. Most of you are looking forward to this event.

Add to the pleasure of visiting Québec an extremely interesting scientific program, and an unforgettable social and ladies' program, this will no doubt be a memorable convention. Moreover, you will have the opportunity to see the latest dental innovations through our exhibitors.

We have also reduced the registration fees for auxiliaries to permit them to participate fully in our activities.

If you complete the registration form before August 1, 1979, you will become eligible to participate in a drawing for a trip to Paris to attend the upcoming FDI annual meeting in October 1979. If you wish to reserve hotel accommodations of your choice, please complete your reservation request as soon as possible by sending the form to convention headquarters.

I look forward to your company in Québec next September.

Yours sincerely,
Clément Caron, D.D.S.
Convention chairman



Québec: un musée d'histoire vivante

Québec, le berceau de la civilisation française en Amérique, ne ressemble à aucune autre ville au monde. Destination touristique par excellence depuis longtemps, ville militaire et le siège du gouvernement depuis sa fondation, c'est la seule ville fortifiée du continent au nord du Mexique.

Québec, c'est un musée d'histoire vivante pour l'Amérique. C'est un mélange inoubliable du traditionnel et du moderne, c'est une ville paisible mais aussi excitante.

Dès votre arrivée, vous vous sentez chez vous. Partout où vous allez, vous ressentez la joie de vivre des Québécois et le caractère français de la ville, dans les petites rues du Vieux-Québec, dans les vieilles maisons, les églises anciennes. Québec n'est pas une ville

qu'on visite tout simplement . . . c'est une expérience!

Capitale historique de la province la plus vaste du Canada, Québec a jalousement conservé et protégé son histoire et son passé. La Place Royale, l'endroit où la ville est née et où Champlain construisit, en 1608, sa première "abitation" sur les rives du fleuve Saint-Laurent, permet encore aujourd'hui d'imaginer l'apparence de ce coin de la ville à l'époque ancienne.

Tout en conservant son passé, la ville s'est ajouté depuis deux ou trois ans, des équipements modernes lui permettant de devenir la grande dame du monde des congrès, une des villes les plus recherchées des congressistes au Canada.

Les exposés scientifiques au congrès de l'ADC . .

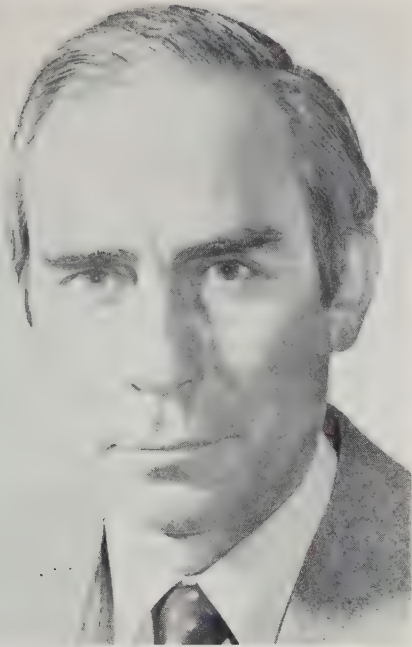
Lors des trois journées au cours desquelles se feront les exposés scientifiques, au congrès de cette année, les congressistes auront accès à des séances en français, en anglais ou à la traduction simultanée.

Le lundi 10 septembre sera une journée typique, alors que le Dr Steven Wei amorcera le programme avec la première moitié de son exposé "Pédodontie et prévention". L'exposé du Dr Wei, donné en anglais et traduit simultanément en français, se terminera le lundi après-midi. Le Dr Denis Forest s'adressera également aux congressistes le premier matin du congrès. Son allocution, prononcée en français, s'intitulera "Radiologie dentaire". À 10h30, ce sera au tour du Dr Robert Barrickman, qui parlera des "Douleurs faciales", en anglais. Il sera suivi du Dr Jean-Louis Bertrand, qui donnera cette année la conférence "Grieve Memorial".

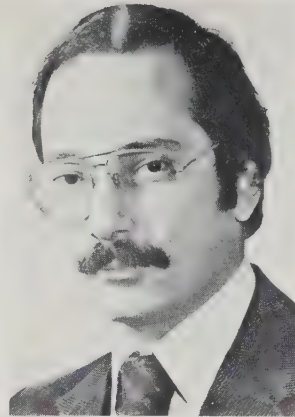
Le Journal de l'ADC continuera de publier, jusqu'en août, des résumés des exposés scientifiques, procurant ainsi aux délégués un aperçu des sujets abordés par les conférenciers.

Le lundi après-midi, le Dr Pierre Desautels présentera un exposé français sur les "Matériaux dentaires", alors que le Dr Bruce Larrick donnera, au même moment, une communication anglaise intitulée "Photographie et audio-visuel en dentisterie".

Le lendemain matin, l'exposé anglais du Dr William Laney, "Le dentiste en milieu hospitalier", sera traduit simultanément en français, tout comme la communication du Dr Murray Bloom au cours de l'après-midi, "L'ordinateur en dentisterie".



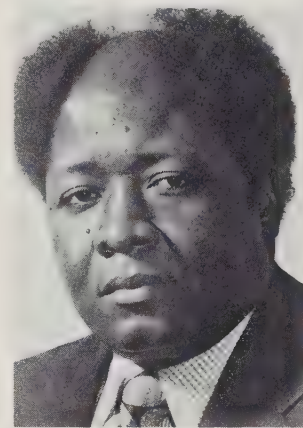
Mlle Diane Martin



Dr Joseph Cholewa



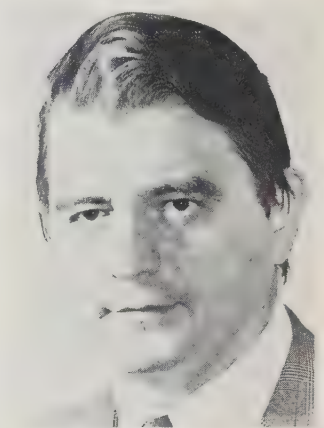
Mlle Marie-Claire Lepage



Dr Roger Lafontant



Mlle Louise Walker



Dr Slobodan Djokovic

Dr Paul Mercier et son équipe . . .

Recherches et traitements de l'atrophie des crêtes résiduelles des maxillaires

La Clinique d'atrophie des maxillaires de l'Hôpital St. Mary a été établie pour s'attaquer à un problème de santé majeur pour de nombreux québécois qui ont perdu toutes leurs dents et dont les crêtes résiduelles sont déficientes à un point tel qu'ils ont des difficultés sérieuses à porter des prothèses dentaires conventionnelles.

Les conférenciers s'efforceront d'expliquer les caractéristiques de l'atrophie des crêtes résiduelles, ses causes et les effets secondaires d'une diminution grave de la fonction masticatoire. Ce handicap sera expliqué tant au point de vue psychologique que nutritionnel et gastrique.

Les dernières techniques employées pour la réadaptation de la fonction masticatoire seront ensuite passées en revue.

Enfin, dans la dernière partie, des études scientifiques tenteront de démontrer les effets bénéfiques à long terme de la réadaptation.

Cher Collègue,

En 1965 l'Association Dentaire Canadienne tenait son congrès annuel à Québec. Elle y sera de retour cette année, du 9 au 12 septembre. Plusieurs d'entre vous attendent cet événement avec impatience car Québec, c'est différent, c'est la joie de vivre, c'est le dépaysement, enfin ce n'est pas une ville qu'on visite tout simplement . . . c'est une expérience.

Ajoutez au plaisir de visiter Québec un programme scientifique extrêmement intéressant et d'un très haut calibre, ainsi que des activités sociales et féminines inoubliables, et vous aurez là un congrès enrichissant et mémorable. De plus, vous aurez la chance de connaître les dernières nouveautés dentaires car les exposants ont répondu en très grand nombre à notre invitation. Quant au personnel auxiliaire, nous avons réduit au minimum les frais d'inscription, leur permettant ainsi d'assister en plus grand nombre aux activités du congrès.

Collez-le dès maintenant et complétez la formule d'inscription au congrès. Ceux qui se seront inscrits avant le 1er août 1979 seront éligibles pour le tirage d'un voyage à Paris au congrès de la FDI. De plus, si vous voulez loger à l'hôtel de votre choix, réservez très tôt en faisant parvenir votre formule de réservation d'hôtel au secrétariat du congrès.

J'espère avoir le plaisir de vous voir à Québec en septembre prochain.

Le directeur général du congrès,
Clément Caron, d.d.s.

Les protecteurs buccaux et les blessures à la bouche

Le port de protecteurs buccaux bien ajustés est directement responsable de la prévention de "certaines de milliers de blessures à la bouche et à la mâchoire lors de la pratique de sports de contact". Telle est l'affirmation que faisait récemment le Dr William Heintz, professeur de dentisterie et conseiller auprès du département d'athlétisme de l'Université de l'Ohio. Dans son article intitulé "Mouth Protection in Sports", le Dr Heintz conseillait aux médecins et aux dentistes de recommander avec la même vigueur le port de cet équipement protecteur dans les autres sports que dans le hockey et le football.

En effet, l'Association canadienne

de hockey amateur (ACHA) a rendu obligatoire le port des casques, des masques et des protecteurs buccaux. C'est le protecteur buccal interne en plastique, ajusté par le dentiste à la forme des dents et de la mâchoire de l'athlète, qui offre la protection la plus efficace et le plus grand confort.

Un protecteur buccal bien conçu est durable. S'il est bien ajusté, il absorbera des chocs qui pourraient, en d'autres circonstances, occasionner de graves blessures à la mâchoire ou au cerveau.

Le type le moins recommandable de protecteur buccal est celui que portent les boxeurs et qui est fabriqué à partir de caoutchouc moulé. Il n'est habituellement pas ajusté.

Au Canada, le casque protecteur de hockey approuvé par l'Association Canadienne des Normes comporte un masque de plexiglass transparent ou de grillage et un protecteur séparé pour le bas du visage.

En 1978, le Dr David Millman, conseiller en chirurgie plastique et reconstructive au Scarborough Centenary Hospital, à Scarborough (Ontario) signalait une hausse de la fréquence des blessures à la bouche et au visage chez les jeunes de 11 à 18 ans. Or, selon les statistiques de l'ACHA, il y avait en 1975 et en 1976 près de 300,000 joueurs inscrits dans ses ligues et presque autant d'autres joueurs non inscrits. Ce nombre ne comprend ni les joueurs professionnels ni la multitude de jeunes qui jouent au hockey sans appartenir à une ligue.

Les jeunes canadiens chaussent leur première paire de patins à l'âge de trois ans, reçoivent leurs premiers points de suture à dix ans et portent une prothèse à l'âge de 15 ans. C'est la généralisation que faisait le Dr Millman dans un article intitulé "Watch Your Face, Handsome", pour donner une idée de l'ampleur du problème.

Dans le sport du hockey, environ 75 pour cent des blessures à la bouche et au visage sont causées par des coups de bâton accidentels. Mais il ne faut pas oublier que la boxe, la lutte, le soccer, le basketball et le football donnent également lieu à de nombreuses blessures au visage. Il importe aussi de rechercher les moyens de réduire la fréquence des blessures de ce genre en gymnastique, dans les arts martiaux, la trampoline, le surfing, le ski, le saut en parachute et l'haltérophilie. Des études ont en effet révélé que la fréquence de blessures dans le sport est dix fois plus élevée chez ceux qui ne portent pas de protecteurs faciaux et buccaux.

Les cas de publicité . . .

suite de la page 273

lguée au Canada en 1976, précise que les dentistes sont en droit de faire de la publicité, pourvu que celle-ci corresponde à la "vérité". Cette précision signifie que les dentistes ne se feront pas passer pour des spécialistes, par exemple, à moins que leur spécialisation n'ait été dûment accréditée.

D'autre part, l'article 15 du Code d'éthique de l'ADC, rédigé il y a presque dix ans, stipule que "toute utilisation directe ou indirecte de la publicité et de la sollicitation est contraire à l'éthique". C'est toutefois aux organismes provinciaux régissant la profession qu'il incombe, au Canada, de prendre les mesures qui s'imposent dans les cas de publicité douteuse.

L'Association Dentaire Canadienne revise présentement son Code d'éthique afin qu'il reflète les dispositions de la législation fédérale de 1976. Le nouveau projet de code a été soumis au conseil d'administration lors de sa réunion de mars et devrait être approuvé au congrès annuel de l'ADC, en septembre prochain, à Québec.

Orofacial injuries

from page 272

figures for 1975 and 1976 showed close to 300,000 registered players in the league and almost the same number of affiliated, but not registered members. This total, however, does not include either professionals or the thousands of hockey players across the country not organized into leagues.

In an article cryptically titled "Watch Your Face Handsome," Dr. Millman simplifies the injury trend saying Canada's young are introduced to skates at three, stitches at ten and dentures at 15.

While up to 75 per cent of orofacial injuries in hockey are caused by accidental or improper use of the stick the tendency for frequent injuries to the face also exists in boxing, wrestling, soccer, basketball as well as football. There is also a need to work on methods of reducing facial injuries in gymnastics, martial arts, trampoline, surfing, skiing, skydiving and weightlifting. Studies indicate up to ten times the injury rate in sports without face and mouth protection.

Injuries to primary and permanent teeth treated in a private paedodontic practice

F. García-Godoy, DDS
Santo Domingo, Dominican Republic

Franklin García-Godoy, Dr Odont
Santo Domingo, Dominican Republic

Maritza Olivo, Dr Odont
Santo Domingo, Dominican Republic

This study describes the etiology, distribution by age and sex, the seasonal variations and types of injuries to primary and permanent teeth of children treated in a private paedodontic practice. The data are statistically analyzed and compared to other investigations.

The literature contains many reports¹⁻²¹ on injuries to permanent teeth in children, with fewer reports on primary teeth. Almost all of them deal with injuries to school age children treated at school dental clinics, hospitals or emergency services associated with departments of paedodontics in dental schools.

Andreasen et al¹ suggested that the different types of dental injuries can vary according to the place where the study was conducted. With a hospital setting, he found that luxations and bone injuries are most predominant, while Ravn and Rossen² reported that tooth fractures are the most predominant injuries in a school dental clinic.

The purpose of this study was to describe the etiology,

distribution by age and sex, the seasonal variations and type of injuries to primary and permanent teeth of children treated in a private paedodontic practice.

Materials and methods

The sample consisted of 105 children of different ages with traumatic injuries to 149 teeth. They were treated in a private paedodontic practice in Santo Domingo, Dominican Republic, during the period of January 1973 to February 1977.

There were 51 boys (aged 10 months to 11 years, 11 months), and 54 girls (aged 11 months to 15 years, 11 months) (Table 1). The patients seen in this private practice were of middle and high socio-economic level. The data registered were: age, sex, date, number of traumatized teeth, cause of injury and classification. Injuries to primary and permanent teeth were categorized according to the investigator's classification (Table 2).

Table 1									
Distribution of children with injured teeth by age and sex (primary and permanent teeth combined)									
		Boys		Girls		Total			
Age		No. of individuals with injured teeth	Average No. of injured teeth per patient	No. of individuals with injured teeth	Average No. of injured teeth per patient	No. of individuals with injured teeth	%	No. of teeth	%
Years	Months								
Under 1	year	1	1.0	1	1.0	2	1.9	2	1.3
1	11	2	1.0	9	1.1	11	10.5	12	8.8
2	11	4	1.5	9	1.4	13	12.4	19	12.8
3	11	11	1.2	10	1.3	21	20.0	26	17.4
4	11	11	1.7	9	1.4	20	19.1	32	21.5
5	11	9	1.4	5	2.0	14	13.3	23	15.4
6	11	3	1.3	4	1.5	7	6.7	10	6.7
7	11	4	1.5	2	2.0	6	5.7	10	6.7
8	11	3	1.3	1	1.0	4	3.8	5	3.4
9	11	2	2.0	—	—	2	1.9	4	2.7
10	11	—	—	—	—	—	—	—	—
11	11	1	2.0	2	1.0	3	2.9	4	2.7
12	11	—	—	1	1.0	1	0.9	1	0.7
13	11	—	—	—	—	—	—	—	—
14	11	—	—	—	—	—	—	—	—
15	11	—	—	1	1.0	1	0.9	1	0.7
Total		51		54		105	100.0	149	100.0

Table 2

Number of teeth injured according to Garcia-Godoy's classification

Classification	Boys				Girls				Total			
	Primary		Permanent		Primary		Permanent		Primary		Permanent	
	No. of teeth	%	No. of teeth	%	No. of teeth	%	No. of teeth	%	No. of teeth	%	No. of teeth	%
Class 1: enamel fracture	1	1.7	2	14.3	—	—	1	11.1	1	0.8	3	13.3
Class 2: enamel-dentin fracture	8	13.3	6	42.9	11	16.7	4	44.5	19	15.1	10	43.5
Class 3: crown fracture with pulp exposure	3	5.0	—	—	1	1.5	—	—	4	3.2	—	—
Class 4: enamel-dentin-cementum fracture	1	1.7	—	—	1	1.5	—	—	2	1.6	—	—
Class 5: root fracture	8	13.3	1	7.1	7	10.6	—	—	15	11.9	1	4.4
Class 6: concussion	27	45.0	2	14.3	33	50.0	3	33.3	60	47.6	5	21.7
Class 7: luxation (partial displacement)	6	10.0	3	21.4	5	7.6	1	11.1	11	8.7	4	17.4
Class 8: intrusion	1	1.7	—	—	1	1.5	—	—	2	1.6	—	—
Class 9: extrusion	1	1.7	—	—	1	1.5	—	—	2	1.6	—	—
Class 10: avulsion (total displacement)	4	6.6	—	—	6	9.1	—	—	10	7.9	—	—
Total	60	100.0	14	100.0	66	100.0	9	100.0	126	100.0	23	100.0

Results

Teeth — The sample of 105 children presented a total of 149 injured teeth (Table 1). Sixty-eight children (64.8 per cent) traumatized one tooth, 36 (34.3 per cent) injured two teeth, and one child (0.9 per cent) injured four teeth. The maxillary central incisors were the most frequently injured teeth, followed by the maxillary lateral incisors, with no significant difference between sexes (Tables 3 and 4). There were 145 teeth injured in the maxilla and four in the mandible, 126 corresponding to the primary dentition and 23 to the permanent dentition.

Table 3

Distribution of teeth according to the side of injury

Side	Boys		Girls		Total
	Primary	Permanent	Primary	Permanent	
Right	31	8	29	4	72
Left	29	6	30	5	70
Total	60	14	59	9	142

Table 2 provides the distribution of the injuries according to the classification. The teeth with concussion injuries presented sensitivity to percussion but no mobility or dislocation.

Etiology — Ninety-nine children damaged their teeth by falling against an object, one was injured by contact with another child, four were struck by an object, and one was injured in a bicycle accident (Table 5).

Seasonal variations — Figure 1 shows the months during which the children were injured. The most predominant month was August, with 14 children presenting with 17 injured teeth.

Most males injured their teeth in September and most females in August. The minimum number of males was June and females, May. The second highest month for boys was November and February for girls. However, there was no significant difference between sexes (Table 6).

DISCUSSION

The general agreement in the literature was that boys suffer injuries to their teeth more often than girls.¹⁻⁴

The results of this study (Tables 1-4) agreed with those

investigations regarding the permanent dentition, but in the primary dentition this study found (not significantly), that more girls injured their teeth than boys, with the ratio of boys-to-girls being 0.9:1. Some authors reported that more boys had injuries to primary teeth than girls but that the difference was not significant.³⁻⁶⁻⁷

In a public health dental service population from the Dominican Republic, García-Godoy⁸ found that contact with another child was the most frequent cause of injury, followed by falling against an object and car and bicycle accidents. The present results in a private paedodontic practice showed that falling against an object was the predominant cause of injury. Haavikko and Rantanen,⁵ found that falling was the principal cause of injury in primary dentition, in their study conducted in a dental school in Finland.

Concussions were the most frequent injuries to primary teeth in this study, while other investigations¹⁻³⁻⁴⁻⁵⁻⁷ reported loosening and dislocation as the principal injury. It should be pointed out that often those who suffer only mild dental injuries do not seek emergency treatment.⁵

In the Dominican Republic, the school summer vacation is from mid-July to mid-September and the winter vacation is from mid-December to mid-January. The country has a constant temperature of 70-90° F, and the most popular sports are baseball and basketball throughout the year.

Of the 105 children who damaged their teeth, the largest number (13.3 per cent) were injured in August. This dif-

Table 4
Distribution of injured teeth by sex

Teeth	Boys		Girls		Total
	Primary	Permanent	Primary	Permanent	
R.U.C.	30	7	28	3	68
R.U.L.	1	1	—	—	2
L.U.C.	27	5	29	4	66
L.U.L.	2	1	—	—	2
R.L.C.	—	—	1	1	2
R.L.L.	—	—	—	—	—
R.L.L.	—	—	1	1	2
L.L.L.	—	—	—	—	—
Total	60	14	59	9	142

Table 5
Etiology of injuries

Etiology	Boys		Girls		No.	%
	No.	%	No.	%		
Fell against an object	47	92.26	52	96.30	199	94.29
Contact with another child	1	1.96	0	—	1	0.95
Struck by an object	2	3.92	2	3.70	4	3.81
Bicycle / tricycle accidents	1	1.96	0	—	1	0.95
Car accidents	0	—	0	—	0	—
Total	51	100.0	54	100.0	105	100.00

Table 6
Distribution of children and injured teeth according to sex and month of injury

Month	Boys			Girls			Total	
	No. of Individuals	Teeth		No. of Individuals	Teeth		No. of Individuals	Teeth
		Primary	Permanent		Primary	Permanent		
January	4	4	1	3	4	—	7	9
February	3	8	—	7	6	2	10	16
March	3	5	—	4	6	2	7	13
April	4	4	—	4	6	—	8	10
May	3	5	—	2	1	—	5	6
June	2	4	—	6	6	1	8	11
July	5	6	—	5	3	3	10	12
August	5	3	3	9	10	1	14	17
September	7	7	1	3	4	—	10	12
October	4	2	4	3	4	—	7	10
November	6	5	5	4	6	—	10	16
December	5	7	—	4	3	—	9	10
Total	51	60	14	54	59	9	105	142

ferred from Eichenbaum's study⁹ in England; he reported August as one of the months with the lowest injuries. Further investigation should be undertaken, including a larger number of children, if possible, in different private paedodontic practices since the findings in this study can only be considered as preliminary epidemiological data.

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Dr. García-Godoy is professor of paediatric dentistry, Department of Dentistry, Universidad Autónoma de Santo Domingo, Santo Domingo, Dominican Republic and is in the private practice of paediatric dentistry at Calle José Joaquín Pérez #101 (Z-1), Santo Domingo, Dominican Republic.

Dr. Franklin García-Godoy and Dr. Olivo are in private paediatric practice, Calle José Joaquín Pérez No. 101 (Z-1), Santo Domingo, Dominican Republic.

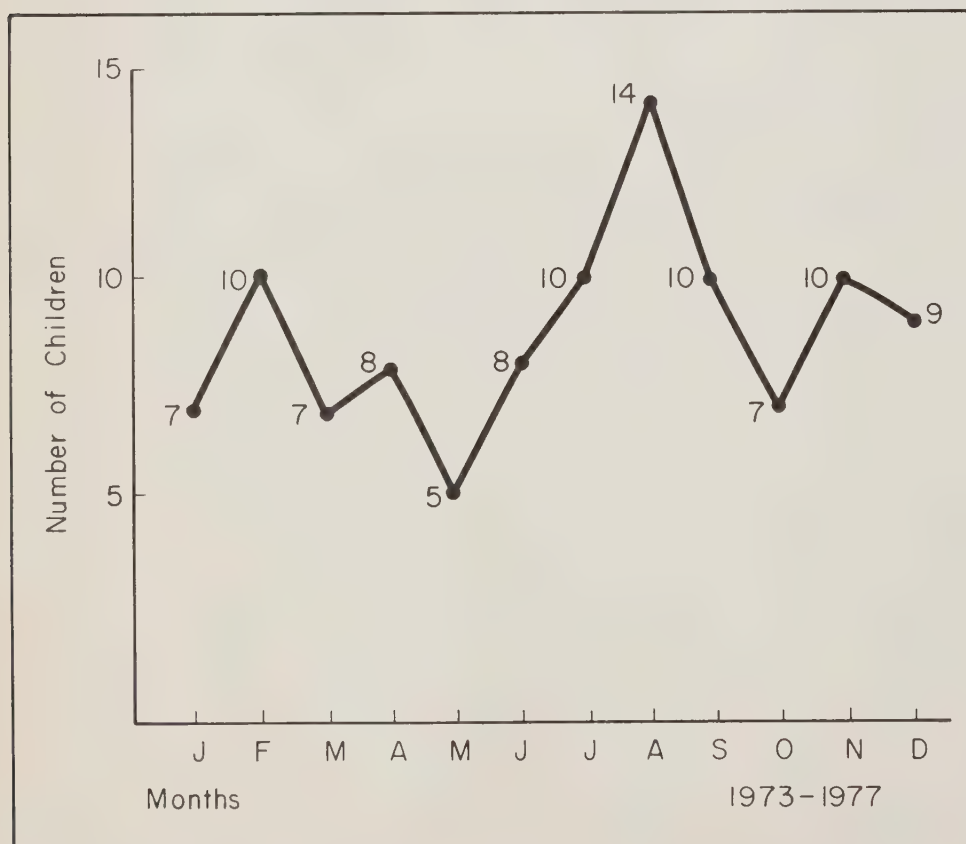


Fig. 1 Number of children injured during the different months.

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Reprint requests to: Dr. F. García-Godoy, Calle José Joaquín Pérez, #101 (Z-1), Santo Domingo, Dominican Republic.

A simplified technique for fabricating a space maintainer is outlined. The importance of maintaining arch perimeter is also stressed.

Clinical technique: Making band space maintainers

W.S. Cheung, DDS
Neil's Harbour, Nova Scotia

Despite all the modern knowledge and development of preventive dentistry today, it is amazing to observe that premature loss of primary teeth is still fairly prevalent. This is especially true in some rural areas where dental knowledge and service are not readily available and the water not fluoridated. It is evident that early loss of primary molars will lead to loss of arch length and, consequently, crowding of the permanent dentition. In order to maintain the arch perimeter, it is necessary to fabricate a space maintainer as soon as premature tooth loss occurs. "To watch and wait for six months or longer to see whether the six-year molar will drift mesially is to practise studious neglect in the important task of arch space control."¹

There are mainly two types of space maintainers: fixed and removable. To maintain the space due to premature loss of primary molars, the fixed type is commonly indicated. The band-loop space maintainer is often used to maintain space unilaterally; and the lingual arch, bilaterally. The making of a band space maintainer need not be tedious or time consuming. The following procedure is suggested as a simplified technique for making the appliance.

Technique

1. Select a proper size stainless steel band for the tooth just posterior to the missing tooth. Adapt the band with a band pusher. The band should fit the tooth fairly tightly so that it cannot be dislodged easily.
2. Occasionally the tooth anterior to the missing tooth may have a distal undercut which can interfere with the path of insertion of the space maintainer (Fig. 1). This happens more often in the lower arch. Remove any distal undercut with a fine diamond bur, so that the loop of

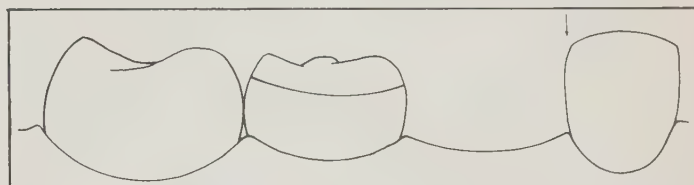


Fig 1 The distal undercut should be removed before taking the impression.



Fig. 2 The band stabilized onto the compound impression with wax prior to pouring with stone.

the space maintainer can butt against the distal surface of the tooth.

3. Select a suitable size, non-perforated aluminum tray for the arch. Cover the whole tray, inside and outside, with a thin layer of vaseline.
4. Soften a half piece of low heat compound cake and adapt it to the side of the tray where the impression is needed. For making a lingual arch appliance, one whole piece of compound is necessary. The compound should not be heated in water for longer than necessary, otherwise it may become brittle and grainy.²

. . . Appliance should be removed at least once a year . . .

5. Insert the tray of compound into the arch when the compound is lukewarm but still plastic. Remove the impression tray from the mouth after one or two minutes. Chill the impression in cold water immediately, for a few seconds.

6. Dry the impression with air. Remove the band from the tooth carefully with a band remover and seat it into the compound impression (Fig 2). Unlike the alginate or elastomeric impression materials, the compound impression is less plastic when set, consequently the band can be precisely seated and less easily moved.

7. Stabilize the band on the impression with wax, and pour up the impression with stone. After the stone sets, remove the impression tray and compound (Fig 3). The model is now ready to send to a dental laboratory along with the prescription for the appliance.

8. The finished appliance should be checked and then cemented in the mouth (Fig 4).

DISCUSSION

The patient should be advised that a regular examination of the space maintainer is necessary. At least once a year the appliance should be removed with a band remover and the tooth inspected carefully for decalcification and carries; then the appliance re-cemented.³⁻⁵ Regular radiographic examination of the developing permanent teeth is also indicated.

Dr. Cheung is a general dental practitioner in Neil's Harbour, N.S.

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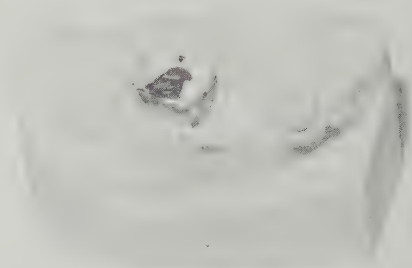


Fig. 3 The model ready to be sent to the laboratory.



Fig 4 Space maintainer inserted in the mouth.

A rare case of multiple tooth impaction

Ravindra M. Shah, BDS, MS, PhD

Marcia A. Boyd, DDS, MA

Vancouver, British Columbia

The prevalence of impacted teeth ranges between seven and 23 per cent among populations of different countries¹⁻³. It is generally agreed in the literature that over 85 per cent of the cases show impaction of one or two teeth, the remainder showing three or four. Impaction of more than four teeth is a rare condition and when observed, it is generally associated with such conditions as cleidocranial dysostosis or endocrine disorders⁴. A rare case of multiple tooth impaction which is not associated with either of the above conditions is reported here.

CASE REPORT

A 31 year old male, on radiological examination, showed 17 impacted teeth. The involved teeth were two mandibular lateral incisors, four canines, seven premolars (except maxillary left second), and four third molars. Primary canines were still retained (Fig. 1). Other primary teeth had been lost several years previously. There were no observable changes in the jaw bones. Radiological examination after one year showed that the condition

remained unchanged. Medical and past family histories were negative and there were no endocrine disorders. The patient's two children had normal dentitions.

DISCUSSION

When multiple impaction is associated with cleidocranial dysostosis, the jaw bones show increased radiodensity around impacted teeth⁵. The unerupted teeth, in addition, may show gemination and/or dilaceration and occasionally a crypt may also form around these impacted teeth. The primary teeth may also be retained. With the exception of retained primary canines, the present case did not show any of these features. Furthermore, there were no clinical signs of cleidocranial dysostosis. The case reported may, therefore, be identified as an idiopathic condition.

*"... experimental studies
in animals may further
our knowledge of clinical oddities ..."*

Only a few cases of multiple tooth impaction, not associated with either cleidocranial dysostosis or endocrine

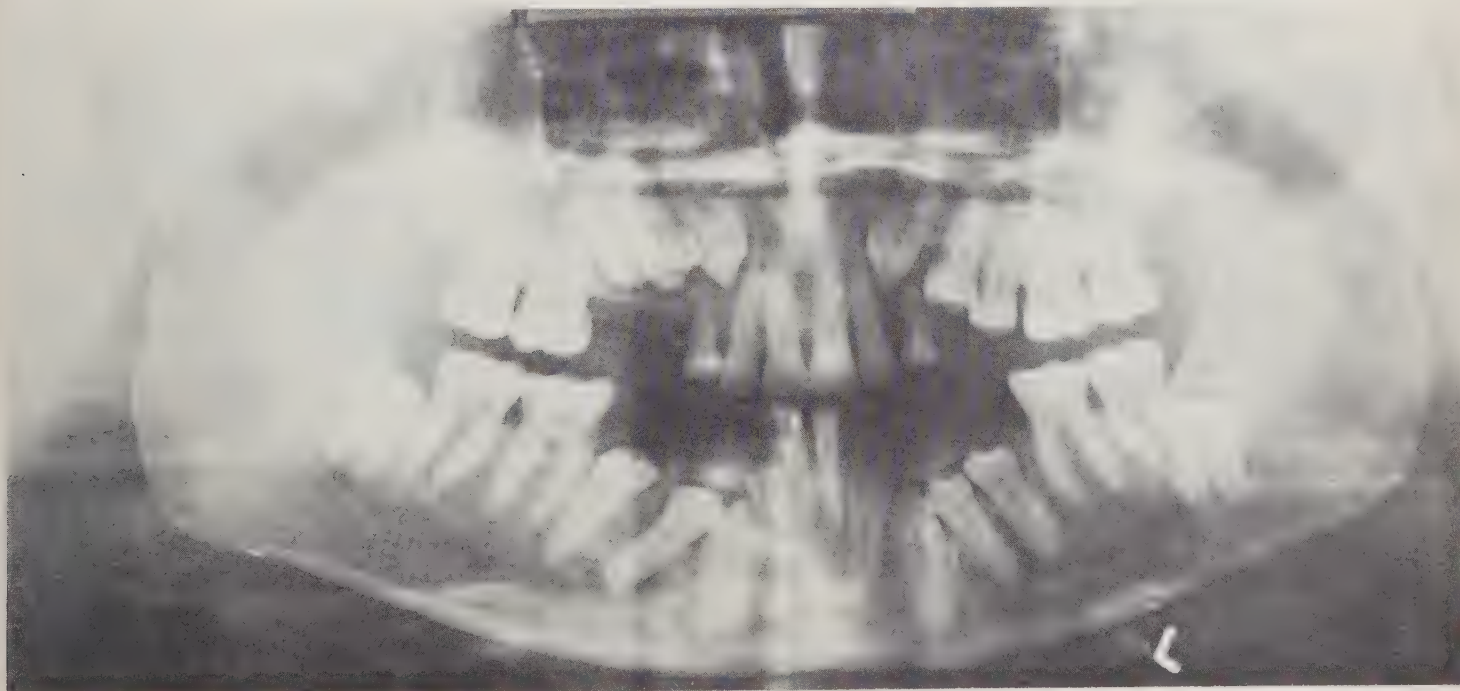


Fig. 1 Panorex radiograph illustrating multiple impactions.

SCIENTIFIC

disorders, have been recorded in the literature.⁶⁻¹⁰ Histologically, such unerupted teeth lack a layer of cellular cementum.¹¹⁻¹² The extraction of retained primary teeth does not seem to promote eruption of the permanent teeth.¹³ Anderson¹¹ and Smith¹² suggested that lack of "eruptive force" may be responsible for multiple tooth impaction. Therefore, the treatment of such cases remains empirical.

Similar multiple impactions have also been observed in some strains of mice and cattle¹⁴⁻¹⁵ and experimental studies in these animals may further our knowledge of such clinical oddities, from both the etiological and clinical viewpoints.

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Dr. Shah and Dr. Boyd are assistant professors, Faculty of Dentistry, University of British Columbia, Vancouver, B.C.

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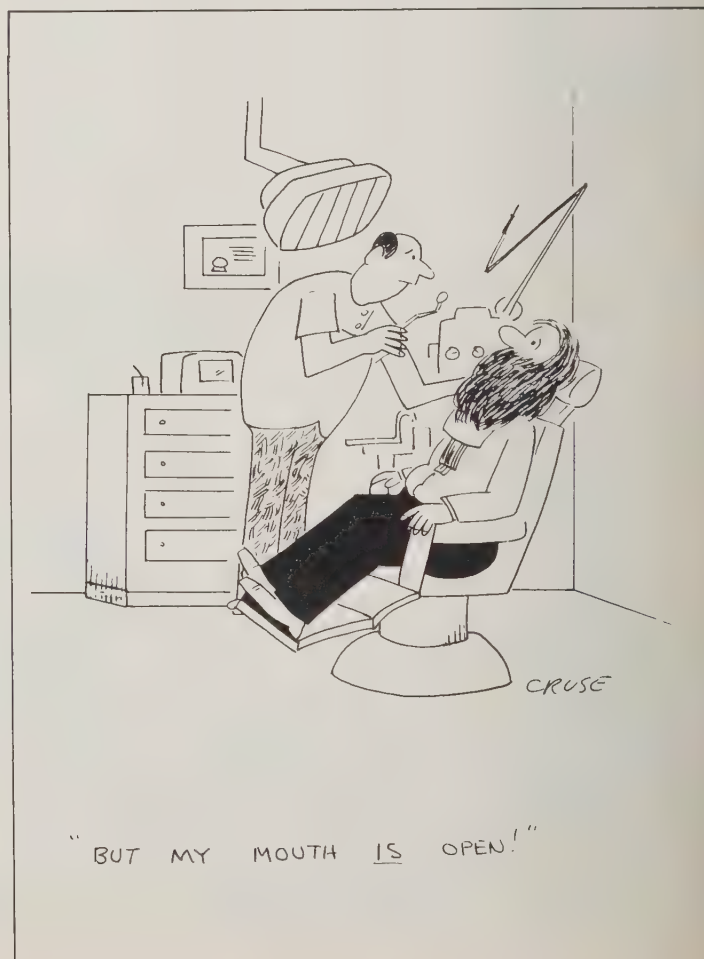
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Elizabeth McKee, editor
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Psychothérapies des maladies psychosomatiques telle que la dysfonction temporo-mandibulaire douloureuse non-organique chez les adolescents

deuxième partie

par Lise Morin

Considérations sur les méthodes psychothérapeutiques de la dysfonction temporo-mandibulaire douloureuse

En parcourant la littérature, nous constatons que peu d'études cliniques ont porté sur les méthodes de traitement psychologique des sujets atteints du syndrome de la dysfonction temporo-mandibulaire douloureuse non-organique. La plupart des recherches actuelles tentent d'en définir les éléments dynamiques et les caractéristiques des structures de personnalités atteintes de ce syndrome sans toutefois proposer un plan de traitement psychothérapeutique approprié. Il est à remarquer que pendant plusieurs années la seule thérapeutique conseillée faisait appel aux méthodes physiques et pharmacologiques par des exercices de Schwartz⁵⁴ au niveau de la contraction-décontraction des muscles de la mandibule et par l'utilisation d'agents chimiques comme les drogues pour calmer la douleur. Par contre, deux chercheurs, Moulton⁵⁵ et Lefer²⁵ ont davantage considéré les aspects psychologiques dans le traitement des sujets atteints de dysfonction temporo-mandibulaire douloureuse non-organique.

Selon Lefer²⁵ l'action du thérapeute-praticien devrait être dirigée vers l'établissement chez le sujet de la stabilité au niveau de l'image du corps par de la réassurance, du réconfort et du respect. Cette première étape aurait pour but de créer un lien de confiance mutuelle entre patient et thérapeute afin de permettre par la suite une prise de conscience chez le patient du rapport qui existe entre son symptôme physique et ses conflits psychologiques. De même, Moulton¹⁶ mentionne l'importance de l'attitude du thérapeute à l'égard de son patient atteint du syndrome de la dysfonction temporo-mandibulaire douloureuse non-organique: attitude chaleureuse et compréhensive à l'égard des besoins propres du patient, du rôle que joue le symptôme physique dans son schéma de vie, des situations où il se manifeste davantage et des conflits psychologiques sous-jacents. Ce dernier auteur énonce donc cinq aspects à considérer dans le processus psychothérapeutique avec cette catégorie de patients: premièrement, une méthode de rééducation visant à aider le sujet à contrôler la fréquence et la sévérité de

l'habitude de tension dont le bruxisme est la manifestation évidente. Selon Moulton¹⁶, le sujet atteint de dysfonction temporo-mandibulaire devrait être rééduqué graduellement à comprendre la connexion qui existe entre la douleur physique ressentie et l'anxiété qui l'accompagne. Dans ce sens, le thérapeute doit réaliser que cette douleur chez le patient est très réelle et que le sujet l'expérimente. Aussi, l'utilisation d'une méthode de relaxation est à conseiller au début du traitement en mettant l'emphase sur la détente corporelle comme moyen de soulager la douleur. A cet effet, la réassurance devrait être le second principe inclus dans le traitement pour calmer le patient au sujet de ses craintes concernant le lien qui existe entre ses douleurs au niveau de la mandibule et la supposée existence d'un cancer ou dommage physique irréparable.

Troisièmement, cette possibilité de "ventiler" ses peurs peut avoir un effet cathartique sur le sujet: celui-ci peut constater que ses peurs sont émotionnelles en les verbalisant par l'attitude permissive et calme du thérapeute qui tente de le rassurer et de le réconforter. Quatrièmement, la *suggestion* pourrait devenir un puissant agent thérapeutique par les indices non verbaux basés sur la confiance et l'honnêteté et aux autres attitudes que le thérapeute peut transmettre au patient.

En dernier lieu, l'interprétation devrait être utilisée avec précaution. A partir du matériel apporté par le sujet, l'interprétation portera sur la relation qui existe entre le symptôme physique et l'anxiété sous-jacente, en évitant au début d'explorer le conflit inconscient en connexion avec le symptôme somatique. Selon Moulton¹⁶, le thérapeute devrait donc posséder l'habileté et l'emphatique nécessaire pour parvenir à aider son patient à prendre conscience des facteurs psychologiques à l'origine de son symptôme et ce, sans le choquer ou le fâcher et risquer ainsi de perdre sa confiance et qu'il y ait apparition d'autres symptômes comme l'on rencontre souvent au cours de l'histoire médicale de ces patients.

Bref, Lefer²⁵ et Moulton¹⁶ tentent donc de faire ressortir les principales notions dont le thérapeute doit tenir compte avec les sujets atteints de dysfonction temporo-mandibulaire douloureuse non-organique tout en mettant en évidence l'importance de l'utilisation de la relaxation et de l'établissement d'une relation positive

entre le thérapeute et son patient dès le début du traitement.

En effet, si nous considérons les différentes formes de thérapeutiques suggérées pour l'approche clinique des maladies psychosomatiques en général, les méthodes de relaxation figurent au premier plan comme technique thérapeutique à conseiller dans le traitement de ces sujets. De même, Moulton le recommande pour les sujets atteints du syndrome de la dysfonction temporo-mandibulaire douloureuse non-organique. La prochaine étape de ce travail consistera à présenter brièvement les principes généraux des méthodes de relaxation pour en dégager l'utilité dans le traitement des maladies psychosomatiques. Par la suite, nous centrerons davantage notre intérêt sur l'emploi du training autogène en comparaison aux autres formes de psychothérapie d'inspiration psychoanalytique.

Techniques de relaxation

Principes généraux

Dans cette partie nous nous limiterons à donner les aspects généraux des techniques de relaxation sans en décrire les différentes étapes en vue de mieux comprendre leur utilité dans le traitement clinique des maladies psychosomatiques.

L'origine de la relaxation remonte à 3 000 ans av. J.-C. Il apparaît qu'à travers tous les temps, la plupart des groupes humains ont cherché à résoudre les tensions internes par des exercices assurant la décontraction musculaire et par là-même psychique. D'où, les méthodes de relaxation utilisées s'appuieraient essentiellement sur la notion de tension liée au tonus musculaire. La relaxation aura donc pour but premier d'assurer par un entraînement soutenu, une connexion harmonieuse des organes.

Il y a 200 ans, des médecins de l'armée britannique en Inde avaient observé que des yogis pouvaient contrôler la douleur ou leurs fonctions physiologiques involontaires à la suite d'un long entraînement mental et physique. A cet effet, Schultz⁵⁰, élève de Freud, fut le premier en 1908 à faire de la détente un moyen thérapeutique. C'est dans l'étude des règles du yoga et des résultats obtenus par ses adeptes qu'il puisa un fond de technique et de méthode de concentration fusionnés avec ses préoccupations en tant que psychanalyste. Vers 1910, il élaborait une méthode d'auto-contrôle appelée "training autogène" que Luthe⁵⁶ continua de développer.

A sa suite, Jacobson⁵⁷ élaborait la méthode de relaxation progressive liée directement à la psychologie du système neuro-musculaire et basée sur la concomitance

entre la tension musculaire et la tension nerveuse localisée: c'est-à-dire que cette méthode viserait essentiellement le plan physiologique de la relaxation en se limitant à éduquer la réduction volontaire du tonus musculaire au repos et par voie de conséquence, d'entraîner la mise au repos du cortex.

Par contre, le training autogène de Schultz, à point de départ psychothérapique et dérivée de la théorie de l'hypnose se fonderait sur la conception globale de la personnalité et viserait à obtenir un relâchement psychique et une détente mentale par décontraction musculaire et psychique pour aboutir à un état hypnoïde. Au moyen d'exercices appropriés, le training autogène a pour objectif d'aider les sujets à exprimer au cours des séances les différents moments et particularités de leur vécu intérieur. Mais contrairement à l'hypnose, il élimine l'état de passivité des sujets car il vise à dégager celui-ci de sa dépendance du thérapeute pour atteindre l'auto-hypnose que le sujet acquiert par son éducation et son entraînement. Ainsi, dans le premier cycle (cycle inférieur)⁵⁸, on leur apprend à éprouver des sensations de contrôle musculaire, de pesanteur des membres, de contrôle vasculaire, de chaleur, à percevoir ses rythmes cardiaques et respiratoires, à développer volontairement une sensation de chaleur épigastrique ou de fraîcheur du front.

Par la suite, un second cycle d'exercices (cycle supérieur) vise à développer la capacité de représentations par images: couleur-objets-concepts abstraits, sentiments-problèmes moraux et scènes pour donner la possibilité au sujet de se représenter symboliquement ses propres tendances inconscientes comme au cours du rêve. Les exercices de ce deuxième cycle se rapprochent des techniques de psychothérapie profonde et devraient être instaurés par un thérapeute bien formé en psychothérapie et accompagnés d'une psychothérapie verbale de support.

Selon Durand de Bousingen le training autogène est une méthode psychothérapique de détente et de maîtrise des fonctions corporelles en ce sens qu'elle utilise des méthodes psychologiques d'entraînement et d'approfondissement s'opposant aux méthodes physiothérapeutiques qui utilisent des agents physiques à des fins thérapeutiques.

Par ailleurs, le training autogène de Schultz est utilisé chez les adolescents et chez les adultes et non chez les enfants avant huit-dix ans. En effet, les exercices abordent directement le corps par l'information verbale, sous une forme de consignes, ce qui demande une analyse corporelle assez poussée, une capacité de verbaliser l'expérience corporelle et de rapporter cette information au thérapeute. Pour ce faire, Michaux, Lelord, Lauzel et

Wintrebert⁵⁹ ont développé la méthode du mouvement passif chez le jeune enfant, basée sur une méthode particulière de rééducation psychomotrice et psychothérapique permettant d'obtenir un état de calme et de relaxation. Cependant nous ne nous attarderons par davantage sur cette dernière méthode étant donné que notre étude porte plus spécifiquement sur les thérapies pour les adolescents atteints de dysfonction temporo-mandibulaire douloureuse.

Comme prochain thème, il serait intéressant de considérer de quelle façon la relaxation apparaît comme une technique efficace dans le traitement des maladies psychosomatiques. Pour ce faire nous définirons les buts et les avantages de son utilisation.

Buts thérapeutiques de la relaxation

Quinodoz⁶⁰ définit la relaxation thérapeutique comme une approche psychothérapeutique d'orientation analytique mettant en oeuvre le dynamisme corporel et psychique inclus dans le déroulement du processus de la relaxation. Selon lui, les buts thérapeutiques de la relaxation seraient donc d'obtenir un remaniement dynamique entraînant une meilleure détente du corps, un meilleur fonctionnement de la vie de relation et une modification de l'économie du symptôme. Ces aspects rejoignent les objectifs poursuivis dans le traitement psychothérapique des maladies psychosomatiques.

D'après Quinodoz⁶⁰ les avantages de la relaxation s'appuient sur deux facteurs: premièrement, elle permettrait une prise de conscience chez le sujet de son corps, de lui-même et d'autrui par la détente qu'elle procure, le corps servant de modèle de médiation entre le sujet et le thérapeute. Ainsi sur le plan verbal, le sujet élaborerait sur tout ce que les réactions toniques du corps impliquent par rapport à la relation interpersonnelle, ceci lui permettrait d'expérimenter des attitudes nouvelles et par la voie des identifications, un nouveau mode de relation. Sur le plan extraverbal la manière dont le thérapeute adopte telle attitude ou le rythme de ses interventions en fonction de la compréhension du processus aurait des répercussions sur le déroulement de la séance de relaxation. De plus, par la découverte avec le sujet des résistances et leur implication dans la détente du corps et dans la relation cela permettrait progressivement de franchir les différentes étapes de la relaxation et ainsi parvenir plus rapidement et plus profondément à un état de détente générale, agréable et restaurateur, non seulement au cours de la séance mais aussi dans les situations de son existence quotidienne.

Comme deuxième facteur, Quinodoz⁶⁰ considère que la présence d'un thérapeute auprès du sujet en relaxation crée une situation de relation thérapeutique en favorisant les phénomènes transférentiels. En conclusion, Quinodoz⁶⁰ mentionne que les meilleurs résultats avec l'utilisation de la relaxation thérapeutique sont obtenus avec les sujets atteints de maladies psychosomatiques.

En ce qui concerne le training autogène proprement dit de Schultz, il semblerait selon Jarreau et Klotz⁶¹ que l'effet produit par la relation thérapeute-sujet serait le fondement et l'agent du training autogène.

D'après Saugy et Stucki⁶², le training autogène de Schultz présenterait trois avantages: premièrement, il posséderait une dimension psychothérapique; deuxièmement, il servirait de guide pour le sujet dans l'acquisition de la détente et la découverte de son corps et, troisièmement, malgré la suggestion, il inciterait le sujet à prendre une part active dans son traitement.

Par ailleurs, Jarreau et Klotz⁶¹ considèrent l'importance de combiner le training autogène à une thérapie verbale d'inspiration analytique dans le traitement des maladies psychosomatiques car dans certains cas, lorsqu'un exercice de relaxation conduit dès l'abord ou secondairement à un échec, il est courant d'observer qu'une intervention psychothérapique verbale opportunément orientée et complétée d'une recherche des erreurs techniques dans l'exécution de l'exercice permette au sujet de retrouver une plus grande détente au cours des séances suivantes. Dans ce sens, il serait intéressant de comparer l'utilisation du training autogène aux psychothérapies d'inspiration psychanalytique dans le traitement clinique des maladies psychosomatiques afin de considérer les liens de ressemblance ou de divergence qui existent entre ces différentes techniques et du rôle qu'elles jouent dans l'amélioration de la santé physique et mentale du sujet.

Training autogène et psycholthérapies d'inspiration psychanalytique

D'après Schultz⁵⁰, l'expérience vécue de calme et de sécurité intérieure que le training autogène vise à procurer, ses effets, souvent très rapides de délaissement et de repos rapprocheraient cette technique des psychothérapies rationnelles dont le caractère propre est d'obtenir avec les procédés les plus simples, ces premiers résultats de tranquillisation et de réassurance. Selon lui, les résultats obtenus de ces autres méthodes par voie de persuasion, de mise en confiance, de conseils et de revalorisation de soi-même se retrouveraient également dans la pratique du training autogène par la sécurisation spécifique au niveau des affects. Ainsi le training autogène aurait un effet thérapeutique sur les affects en permettant de les différencier, de détecter les tensions affectives désagréables, en augmentant ou en diminuant leur intensité, selon le cas, et en permettant au sujet de conquérir une objectivité et de contrôler les émois de son affectivité. De plus, les exercices du cycle supérieur en particulier, permettraient l'approche d'un matériel inconscient obtenu en état de concentration et donneraient ainsi au sujet la possibilité de s'auto-analyser comme au cours d'une cure d'inspiration psychanalytique.

Dans ce sens, Bergès⁶³ considère que les conditions matérielles (silence, demi-obscurité, position allongée,

palpation, mobilisation du rythme et de la respiration, voire du thérapeute, rappel et dénomination des parties du corps) dans lesquelles s'effectuent les séances de training autogène favoriseraient la régression à des états émotionnels passés et permettraient la libération d'énergie affective et agressive bloquée. Il y aurait donc une certaine ressemblance avec le travail qui s'opère au cours d'une psychothérapie psychanalytique.

De leur côté, Ajuriaguerra et Badaracco⁶⁴ rapprochent le training autogène de la psychothérapie verbale au sujet de la facilitation quant à la relation de transfert qu'elle procure dans les deux formes de technique par l'atmosphère créée et par l'impression de calme et de réassurance que le thérapeute dégagerait dans sa relation avec son patient.

Cependant, Jarreau et Klotz⁶¹ considèrent que le training autogène se distingue des autres formes de thérapies verbales par le pouvoir auto-thérapeutique qu'acquiert le sujet au cours de la pratique de cette méthode et qu'il peut utiliser en face de toute situation anxiogène. Selon eux, le training autogène permettrait donc de réduire au minimum les risques de traumatisme et de décompensation qui pourraient résulter d'une psychothérapie verbale trop insistante et inopportune. Schultz⁵⁰ remarque aussi que dans les autres méthodes, les expériences et les modifications internes conduisent à un changement d'attitude alors que dans le training autogène le changement d'attitude entraînerait par la suite un nouveau mode de sentir et de vivre. D'où il y aurait donc au début une période de restructuration et de revalorisation du moi par l'intermédiaire de la défense corporelle pour parvenir à une prise de conscience de ses tensions physiques et des états émotionnels qui les accompagnent.

En conclusion, certains auteurs dont Ajuriaguerra et Badaracco⁶⁴ ainsi que Jarreau et Klotz⁶¹ considèrent l'importance d'associer la technique de relaxation à une forme de psychothérapie verbale centrée sur l'interprétation des situations concrètes c'est-à-dire qui vise à mettre en valeur les formes tensionnelles de comportement en relation avec les types de réactions corporelles face à une situation et des dépenses énergétiques produites par ces états tensionnels. Pour leur part, Jarreau et Klotz⁶¹ insistent sur l'importance du mode de relation établi entre le thérapeute et son sujet. Selon eux, cette relation devrait servir de soutien au sujet dans le renoncement conscient aux tensions et aux symptômes physiques qu'il effectue graduellement et comme encouragement à continuer l'effort dans sa conquête progressive de lui-même.

En résumé, il semblerait donc que sur le plan des effets thérapeutiques produits chez le patient et des processus psychologiques instaurés (transfert, relation de confiance mutuelle entre le thérapeute et le sujet) au cours des séances de traitement, l'utilisation de la technique du training autogène acquerrait un sens psychothérapique et se rapprocherait vraisemblablement des

autres formes de psychothérapies d'inspiration psychanalytique. D'autres part, le training autogène présenterait certaines particularités par le médium utilisé pour obtenir ces effets thérapeutiques chez le patient: le corps devenant le lieu de médiation entre le thérapeute et son patient. De plus, il conférerait un pouvoir auto-thérapeutique au sujet en le faisant participer activement à son traitement par la pratique régulière de la relaxation et qui lui permettrait par la suite d'affronter des situations difficiles devant lesquelles il est parfois placé. En général, il est toutefois conseillé d'associer l'utilisation du training autogène à d'autres formes de psychothérapies verbales pour favoriser davantage l'évolution psychothérapique du traitement et prévenir ainsi les dangers d'une régression marquée à un niveau prégénital.

A cette étape de notre étude, si nous revenons à l'objectif premier de notre travail qui consistait à explorer les principales données concernant le traitement clinique des maladies psychosomatiques telle que la dysfonction temporo-mandibulaire douloureuse chez les adolescents, il nous apparaît nécessaire d'apporter quelques considérations sur la psychothérapie pour les adolescents psychosomatiques. Comme nous l'avons mentionné auparavant, peu d'auteurs se sont penchés spécifiquement sur le traitement clinique des maladies psychosomatiques chez les adolescents et à l'heure actuelle, aucun écrit n'a paru dans la littérature sur les techniques psychothérapiques à utiliser avec les adolescents souffrant du syndrome de la dysfonction temporo-mandibulaire non-organique. Pour ces raisons, nous envisagerons les possibilités de traitement psychologique avec cette catégorie particulière de patients en se basant sur les différentes informations recueillies au cours de notre travail.

Considérations sur la psycholthérapie chez les adolescents psychosomatiques

D'après Mâle⁶⁵, deux difficultés majeures se présentent dans la psychothérapie avec les adolescents: premièrement, le monde vécu par les adolescents serait différent de celui de l'adulte par ses signaux sexuels intenses, contradictoires, souvent illogiques, ambigus et parfois menaçants, ce qui entraînerait chez lui des attitudes de défense et des inhibitions multiples; deuxièmement, chez l'adolescent, le langage adulte serait désinvesti pour aboutir à une compréhension du "sens actuel des mots", de la "défense verbale", de l'expression intuitive et défensive comparable au langage animiste de l'enfant. Par conséquent, Mâle⁶⁵ considère que toute psychothérapie uniquement verbale est difficile avec ce groupe de sujets. De même, il déconseille la cure-type analytique avec les adolescents étant donné la labilité et la mobilité habituelle du "moi" et la relation alors établie entre le thérapeute et l'adolescent qui serait souvent accompagnée de conduites directives ou semi-

directives doublant les interprétations de conflits anciens. Il recommande donc l'utilisation d'un type de psychothérapie visant à rendre autonome et responsable l'adolescent tout en lui permettant de faire le lien avec la réalité.

Par ailleurs, Mâle⁶⁵ mentionne deux problèmes propres à la période de l'adolescence et dont il faut tenir compte dans la psychothérapie, soit: le problème de la reconnaissance du corps, c'est-à-dire de l'indentification corporelle, et le problème de la maturation sexuelle, c'est-à-dire de l'accès à la vie génitale. A cet effet, la forme de psychothérapie utilisée avec l'adolescent devra donc tendre vers la réassurance et la déculpabilisation de l'adolescent sur son identité corporelle et sexuelle.

Par conséquent, Mâle⁶⁵ recommande l'utilisation des méthodes de relaxation thérapeutique tel que le training autogène chez l'adolescent psychosomatique associée avec un type de psychothérapie d'inspiration analytique. Ainsi, la pratique de la relaxation thérapeutique lui permettrait donc de mieux découvrir et apprécier son corps, de se laisser aller à ses affects, à sa vie émotionnelle et fantasmatique, tout en gardant le contrôle et ce, sans culpabilité.

Ilona Demosak-Kelen et Szakacs⁶⁶ soulignent l'avantage de relaxation chez l'adolescent atteint de maladie psychosomatique. Au début, elle ne demanderait pas de verbalisation de la part du sujet et elle aurait avant tout un effet rapide sur les symptômes neuro-végétatifs présentés par l'établissement d'un nouveau dialogue entre l'adolescent et son appareil tonico-émotionnel. D'où la nouvelle image corporelle parallèle au changement somatique de la puberté deviendrait acceptable, les sentiments touchant les pulsions et les excitations dues au nouvel effet hormonal deviendraient compréhensibles, les phantasmes et le sentiment de culpabilité que les accompagnent perdraient leur effet. De plus, selon Ilona Demosak-Kelen et Szakacs⁶⁶, au cours de la relaxation il peut se créer des transferts positifs qui favorisent l'indentification et la maturation psychique de l'adolescent tout en l'aidant dans la liquidation de ses difficultés résultant de son ambivalence et de son asservissement par rapport aux parents.

Pour ce faire, Ilona Demosak-Kelen et Szakacs⁶⁶ proposent la psychothérapie de groupe chez les adolescents psychosomatiques en raison de la résistance de plus en plus forte qu'ils manifestent en thérapie individuelle lorsque leurs relations interpersonnelles deviennent asymétriques. Avec le groupe, cette résistance aurait un effet atomisant, la structure de groupe devenant une structure "d'étoiles" où les relations se feraient surtout avec le thérapeute. Dans le même sens, Bergès⁶³ suggère comme modèle de psychothérapie chez les adolescents l'association d'une méthode de relaxation en groupe avec des entretiens psychothérapeutiques espacés. Selon lui, chez certains adolescents, la relaxation apparaîtrait alors comme une voie d'abord de réassurance concernant le corps propre et comme un axe autour du-

quel, par les séances d'entraînement et d'expériences personnels et de contrôle hebdomadaire, s'organiserait et se structurerait les énergies et les phénomènes d'ordre transférentiel suscités par la psychothérapie verbale. De plus, il préconise la présence conjointe d'un couple homme-femme comme thérapeutes de groupe, représentant symboliquement le couple parental et des modèles d'identification pour les deux sexes.

De son côté, Burner⁶⁷ mentionne l'importance de la formation des thérapeutes à la psychothérapie de groupe, différente de celle de la psychothérapie individuelle, car elle demande en plus la connaissance théorique et pratique des notions de catharsis de groupe, de dynamique de groupe, d'interprétations de groupes, leur maniement et leurs effets.

Enfin, certains auteurs (Mâle,⁶⁵) et Barande, Bourdier, Daymas et Lugassy,⁶⁸ montrent l'importance dans la psychothérapie d'adolescents d'offrir du soutien aux parents tout en accordant une relation individuelle privilégiée à l'adolescent en vue de favoriser activement son autonomie et son individuation vis-à-vis son milieu familial.

deuxième de trois parties

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Lise Morin était une étudiante à l'Université de Montréal.

Un cas très rare d'inclusion multiple

Ravindra M. Shah, BDS, MS, PhD

Marcia A. Boyd, DDS, MA

Vancouver, B.C.

La fréquence des cas d'inclusion dentaire varie de sept à vingt-trois pour cent selon les populations de différents pays.¹⁻³ Les auteurs s'accordent en général pour estimer à 85 pour cent de ces cas, ceux qui présentent l'inclusion de une ou deux dents, les autres en ayant trois ou quatre. L'inclusion de plus de quatre dents est très rare et est généralement associée à des conditions telles que la dyostose cleido-cranienne ou des mal-fonctions endocrines.⁴ Nous rapportons ici un très rare cas d'inclusion multiple qui n'est associé avec ni l'un ni l'autre de ces désordres.

RAPPORT DE CAS

L'examen radiologique d'un mâle âgé de 31 ans révèle la présence de 17 (dix-sept) dents incluses. Il s'agit de deux incisives latérales mandibulaires, quatre canines, sept prémolaires (la deuxième supérieure gauche faisant exception) et quatre troisièmes molaires. Les canines primaires sont encore présentes (fig 1). D'autres dents primaires sont tombées depuis un certain nombre d'années. Les os maxillaires ne présentent comme tels aucun signe particulier.

Un examen radiologique effectué un an plus tard ne fera ressortir aucun changement notable. Les antécédents médicaux de la famille du patient sont négatifs et on n'y retrace aucun ennui de type endocrin. Les deux enfants du sujet ont des dentitions normales.

DISCUSSION

Lorsque l'inclusion multiple est associée à la dyostose cleido-cranienne, les os maxillaires présentent une augmentation de radio-opacité autour des dents incluses. De plus, celles-ci peuvent faire l'objet de gémination et/ou de dilacération et, de temps à autre, on peut noter la formation de cryptes autour des dents incluses.⁵ Les dents primaires sont souvent conservées. A l'exception de la présence des canines primaires, le patient en question ne présentait aucune de ces particularités, non plus qu'aucune évidence clinique de dyostose cleido-cranienne. Le cas peut ainsi être classé comme désordre idiopathique.

Seulement quelques cas d'inclusion multiple non associés avec la dyostose cleido-cranienne ou les troubles endocrins sont rapportés dans la littérature.⁶⁻¹⁰ Au point de vue histologique, il manque à ces dents incluses une couche de ciment cellulaire¹¹⁻¹². L'extraction des dents primaires ne semble pas promouvoir l'éruption des per-

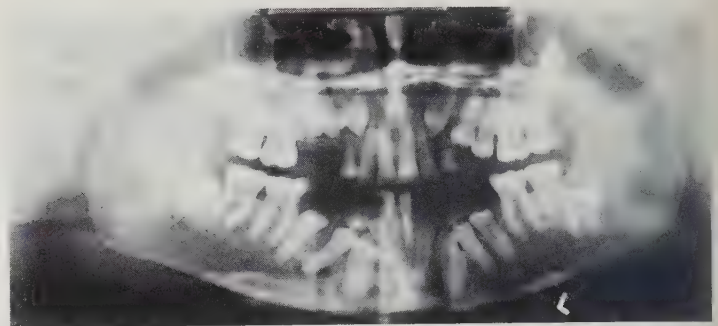


Fig. 1. Panorex radiograph d'inclusion dentaire.

manentes.¹³ Anderson¹¹ et Smith¹² ont suggéré que l'inclusion multiple pouvait être la conséquence d'un manque de "force éruptive". Le traitement de ces cas demeure donc totalement empirique.

On a pu observer des cas similaires d'inclusion multiple chez certaines espèces de souris et de bétail.¹⁴⁻¹⁵ L'étude plus poussée de ces animaux poura éventuellement nous faire comprendre ces bizarreries, tant au point de vue étiologique que clinique.

Les auteurs tiennent à remercier Mlle Vaile Long pour son travail de secrétariat.

Les Drs Shah et Boyd sont professeurs adjoints à la Faculté de médecine dentaire de l'université de la Colombie Britannique à Vancouver.

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GUIDE À L'INTENTION DES COLLABORATEURS

La rédactrice en chef du Journal de l'Association Dentaire Canadienne accueillerait avec plaisir des articles inédits, des analyses critiques des documents relatifs à des progrès en dentisterie et des rapports cliniques. Il est entendu que les articles ou autres écrits présentés pour fins de publication n'auront pas été soumis à d'autres publications.

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2. Kilpatrick, H.C. Work Simplification in dentistry, ed. 2. Philadelphia, Saunders, 1964.

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ANNOUNCEMENTS

We urge readers to confirm meeting dates with the contact listed with each announcement.

CANADIAN DENTAL ASSOCIATION, 1979 National Convention, Quebec City, September 9-12. Contact: Dr. Clément Caron, Convention Chairman, 1979 CDA National Convention, 1575 St. Louis Road, Sillery, Quebec G1S 1G4. Telephone: (418) 527-8969 or 687-5271.

ASSOCIATION DENTAIRE CANADIENNE, Congrès national 1979, Québec, 9-12 septembre. Pour renseignements: Dr. Clément Caron, directeur général, congrès 1979 de l'ADC, 1575 chemin St-Louis, Sillery, Québec G1S 1G4. Téléphone: (418) 527-8969 ou 687-5271.

CANADIAN MEETINGS

JULY

7TH INTERNATIONAL SYMPOSIUM ON DENTAL HYGIENE, Vancouver, British Columbia, July 25-28, 1979. Contact: 7th International Symposium on Dental Hygiene, c/o Venue West Ltd., 1704-1200 Alberni Street, Vancouver, British Columbia V6E 1A6.

SEPTEMBER

CANADIAN ASSOCIATION OF ORTHODONTISTS, 31ST ANNUAL MEETING AND CONVENTION, Hotel Frontenac, Quebec City, September 8-9, 1979. Contact: Dr. R. Faith, 605-1538 Sherbrooke Street West, Montreal, Quebec, or Dr. J.J. Schachter, Box 952, Saskatoon, Saskatchewan S7K 3M4.

CANADIAN ACADEMY OF ENDODONTICS, 1979 Annual Meeting, Quebec City, Quebec, September 8-9, 1979. Contact: Dr. Jean Claude Giguere, 1575 chemin St. Louis N., Sillery, Quebec G1S 1G4.

CANADIAN ASSOCIATION OF ORAL AND MAXILLOFACIAL SURGEONS ANNUAL MEETING, Quebec City, September 8-11, 1979. Theme: Maxillofacial Trauma. Contact: Dr. Victor Goodyer, 565 St. Jean, Quebec City, Quebec G1R 1P5.

CANADIAN ACADEMY OF ORAL RADIOLOGY ANNUAL MEETING, Quebec City, September 9, 1979. Contact: Dr. A. Ruprecht, Department of

Diagnosis and Oral Radiology, University of Saskatchewan, Saskatoon, Saskatchewan S7N 0W0.

ROYAL COLLEGE OF DENTISTS OF CANADA SYMPOSIUM, Chateau Frontenac Hotel, Quebec City, September 9-10, 1979. Theme: "1979 — The International Year of the Child: Dental Perspectives." Speakers are from Denmark, Switzerland, the United States and Canada. Contact: Dr. C.L.B. Lavelle, Program Chairman, RCDC Symposium, Faculty of Dentistry, University of Manitoba, Winnipeg, Manitoba R3E 0W3.

British Centenary plans announced

The British Dental Association will celebrate its Centenary next year. Plans are to induct His Royal Highness the Duke of Edinburgh into the Association during the opening celebrations at Royal Festival Hall, July 10, 1980. A formal luncheon with scientific meetings in Queen Elizabeth Hall will follow that afternoon and the next day, Friday, July 11. An evening reception at Guild Hall is also planned.

Professor N.W. Johnson is chairman of the Scientific Committee that has organized a program featuring speakers from the United States and Australia as well as from Britain.

Oral health care

The scientific program has been divided into three sections, each one lasting half a day. The first theme is "The Prevention of Oral Disease" which will present a scientific analysis of methods used in the prevention of dental and oral disease. There will be a review of current research directed towards the development and evaluation of new preventive methods.

"Provision of Oral Health Care," is the theme of the second session which will include a critical evaluation of the British Health Service and a comparison of the British system with programs in other countries.

Theme three, "Advances in the Treatment of Oral Disease," will con-

39TH ANNUAL CONVENTION OF THE NORTHERN ONTARIO DENTAL ASSOCIATION, North Bay, Ontario, September 14 — 16, 1979. Contact: Dr. Yosh Kamachi, secretary-treasurer, Northern Ontario Dental Association, 161 Main Street East, North Bay, Ontario P1B 1A9.

OCTOBER

CANADIAN SOCIETY OF FORENSIC SCIENCE ANNUAL MEETING, Ritz Carlton Hotel, Montreal. October

sist of a study of the capabilities and sophistication of modern dental surgery. Papers will be presented on the control of pain and anxiety during dental surgery and on ways to rehabilitate function and restore aesthetics in patients suffering from severe oral or dental disease.

OBITUARIES

SMITH, Jean V., graduated University of Montreal, 1926. Died March 20, 1979 in Hawesbury, Ontario.

RANKING, M.P., graduated Dalhousie University, 1953. Died 1979.

McEWEN, William James, died March 29, 1979 in Hamilton, Ontario. Dr. McEwen graduated from the Royal College of Dental Surgeons in 1913.

CASSELS, Michael D., graduated University of Toronto, 1958. Died April 3, 1979.

MORTON, G.V., died February 7, 1979. Dr. Morton, a Life Member of the Canadian Dental Association graduated from the Royal College of Dental Surgeons in 1913.

CÔTÉ, Léo, est décédé en janvier, 1979. Gradué Université de Montréal, 1955.

15-19, 1979. Two-day symposium on Dentistry and the Law will be held the 15th — 16th. Contact: Dr. R.B.J. Dorion, president, Canadian Society of Forensic Science. Suite 710D, Sun Life Building, Montreal, Quebec H3B 2V6.

NOVEMBER

TORONTO ACADEMY OF DENTISTRY Annual Winter Clinic, Royal York Hotel, Toronto, November 22, 1979. Contact: Academy of Dentistry, 234 St. George Street, Toronto, Ontario, M5R 2P2.

INTERNATIONAL MEETINGS

JULY

SECOND ASIAN PACIFIC CONGRESS IN ANXIETY AND PAIN CONTROL IN DENTISTRY, Honolulu, Hawaii, July 2-5, 1979. Contact: Australian Society for the Advancement of Anaesthesia and Sedation in Dentistry, Suite 904. Hooker House, 175 Pitt Street. Sydney, New South Wales 2000.

ASSOCIATION OF AMERICAN DENTISTS, Kansas City, KS, U.S.A., July 13-14, 1979. Contact: Dr. Melvin T. Munn, 10511 Wyatt Street, Dallas, TX 75218, U.S.A.

SOCIETY FOR THE ADVANCEMENT OF ANAESTHESIA IN DENTISTRY, Second International Congress on Modern Pain Control (Sedation, Anaesthesia and Analgesia in Dentistry), Royal Lancaster Hotel, London, England. July 13-16, 1979. Contact: secretary, SAAD '79, 53 Wimpole Street, London W1M 7DF, England.

FOURTH DENTAL CONGRESS of Rio Grande do Sul and the 14th Brazilian Dental Congress, Porto Alegre, Rio Grande Do Sul, Brazil. July 14-20, 1979. Contact: Luis Alberto A. Kramer, Fourth Congresso Odontologico Rio Grandense. Caixa Postal 1118-90000, Porto Alegre RS, Brazil.

INTERNATIONAL ASSOCIATION OF DENTISTRY FOR CHILDREN Seventh Congress, Budapest, July 19-22, 1979. Contact: Congress Bureau Motesz, H1361 Budapest, P.O. Box 32, Hungary.

IV INTERNATIONAL DENTAL CONGRESS, Rio de Janeiro, Brazil,

July 21-26, 1979. Contact: professor R.S. Wilhelm, General Secretary, AV. 13 de Maio, 13-10º Andar, Rio de Janeiro, RJ, Brazil.

7TH INTERNATIONAL SYMPOSIUM ON DENTAL HYGIENE, Vancouver, British Columbia. July 25-28, 1979. For details see listing under "Canadian Meetings".

AMERICAN NATIONAL DENTAL HYGIENISTS' ASSOCIATION, Washington, DC, U.S.A. July 29-August 3, 1979. Contact: Ms. Lynda Stallworth, 419 W. Queen, #7, Inglewood, CA 90301, U.S.A.

AUGUST

FIRST LATIN AMERICAN CONGRESS and the Second National Congress on Institutional Odontology, Mexico City, Mexico. August 13-17, 1979. Contact: Dr. Vincente A. Garza. President of the Organizing Committee, Unidad de Congresos. C.M.N., Avenida Cuauhtemoc. No. 330, 4th floor, Mexico 7, D.F. Mexico.

62ND ANNUAL SESSION OF THE SCANDINAVIAN ASSOCIATION FOR DENTAL RESEARCH (Scandinavian Division of IADR), Bergen, Norway. August 17-18, 1979. Contact: Dr. Trygve Lie. School of Dentistry, University of Bergen. Arstadveien 17, N-5000 Bergen, Norway.

SEPTEMBER

INTERNATIONAL ASSOCIATION FOR ORTHODONTICS New Orleans, La., U.S.A., September 12-15, 1979. Contact: Ms. Joanna Carey, 645 N. Michigan Avenue, Suite 522, Chicago, IL 60611, U.S.A.

AMERICAN ASSOCIATION OF ORAL AND MAXILLOFACIAL SURGEONS Annual Meeting, New Orleans, La., U.S.A., September 14-18, 1979. Contact: AAOMS, 211 East Chicago Avenue, Chicago, IL 60611, U.S.A.

AMERICAN SOCIETY OF PSYCHOSOMATIC DENTISTRY AND MEDICINE, Miami, FL U.S.A., September 15-16, 1979. Contact: Dr. Leo Wollman, 2802 Mermaid Avenue. Brooklyn, NY 11224, U.S.A.

INTERNATIONAL ACADEMY OF GNATHOLOGY, Coronado, California, U.S.A., September 18-23, 1979. Contact: Dr. Charles G. Eller, 4223 Palm Avenue, La Mesa, CA 92041, U.S.A.

SIXTH INTERNATIONAL CONFERENCE ON ENDODONTICS, Philadelphia (University of Pennsylvania Centennial Scientific Symposia) U.S.A., September 21-24, 1979. Contact: Dr. W. Walter Cohen. School of Dental Medicine, 4001 Spruce Street. Philadelphia, PA 19104, U.S.A.

AMERICAN SOCIETY OF PSYCHOSOMATIC DENTISTRY AND MEDICINE, San Diego, California. U.S.A., September 25, 1979. Contact: Mr. Leo Wollman, 2802 Mermaid Avenue, Brooklyn, NY 11224, U.S.A.

38TH ANNUAL MEETING OF THE JAPAN ORTHODONTIC SOCIETY, Sapporo, Japan. September 25-27, 1979. Contact: professor Shinki Nakamura. Hokkaido University, School of Dentistry, Nishi 7-chome, Kita 13-jo. Kita-ku, Sapporo, Japan.

ORAL-FACIAL ANOMALIES: RESEARCH AND MANAGEMENT, Philadelphia. Pa., (University of Pennsylvania Centennial Scientific Symposia) U.S.A., September 26-30, 1979. Contact: Dr. W. Walter Cohen, School of Dental Medicine, 4001 Spruce Street. Philadelphia, PA 19104, U.S.A.

NEW ORLEANS DENTAL CONFERENCE, New Orleans, La., U.S.A., September 27-30, 1979. Contact: Dr. Peter L. Glaser, 2121 N. Causeway Blvd., Suite 272, Metairie, LA 70001, U.S.A.

OCTOBER

FIRST INTERNATIONAL CONGRESS ON HORMONES AND CANCER, Rome, Italy, October 4-6, 1979. Contact: professor S. Iacobelli, Laboratorio di Endocrinologia Molecolare. Istituto de Clinica Osterica e Ginecologica, Universita Cattolica, Via Pineta Sacchetti, 644-00168 Rome, Italy.

AMERICAN ASSOCIATION OF HOSPITAL DENTISTS, Denver, Co., October 4-7, 1979. Contact: Dr. George A. Kentros, University of Alabama. School of Dentistry, 1919 Seventh Avenue South, Birmingham, AL 35294, U.S.A.

AMERICAN INSTITUTE OF ORAL BIOLOGY, Palm Springs, California, U.S.A., October 6-10, 1979. Contact: Mrs. Barbara P. Ward, P.O. Box 481, South Laguna, CA 92677, U.S.A.

NEW YORK STATE ACADEMY OF DENTAL PRACTICE ADMINISTRATION MEETING, Toronto, Ont., Can.,

October 12-13, 1979. Speaker: Dr. Harold Wirth of New Orleans. Contact: New York State Academy of Dental Practice Administration, 1736 Mount Hope Avenue, Rochester, NY 14620, U.S.A.

DENTAL SECTION OF THE AUSTRIAN MEDICAL PRACTITIONERS ASSOCIATION and the Austrian Technicians Society, Vienna. October 12-15, 1979. Contact: Bundesfachgruppe für Zahn-Mund-und Kieferheilkunde der Österreichischen Ärztekammer, Weinburggasse 10-12 Vienna, Austria.

AMERICAN ACADEMY OF IMPLANT DENTISTRY, Dallas, TX U.S.A., October 15-20, 1979. Contact: Mr. John P. Winiewicz, 469 Washington Street, Abington, MA 02351, U.S.A.

AMERICAN ACADEMY OF GOLD FOIL OPERATORS, Dallas, TX U.S.A., October 18-19, 1979. Contact: Dr. Jack G. Seymour, 3532 E Shields, Fresno, CA 93726, U.S.A.

AMERICAN ACADEMY OF DENTAL RADIOLOGY, Dallas, TX U.S.A., October 18-20, 1979. Contact: Dr. Wm. R. Wege, Medical College of Georgia, School of Dentistry, Dept. of Radiology, Augusta, GA 30902, U.S.A.

AMERICAN ACADEMY OF GOLD FOIL OPERATORS, Honolulu, Hawaii, October 19-20, 1979. Contact: Dr. David A. Grainger, Dept. of Operative Dentistry, Box J-415, JHMH, College of Dentistry, University of Florida, Gainesville, FL 32610, U.S.A.

AMERICAN COLLEGE OF DENTISTS, Dallas, Tx., U.S.A. October 20, 1979. Contact: Dr. R.J. Nelsen, 7316 Wisconsin Ave., Suite 304, Bethesda, MD 20014, U.S.A.

FÉDÉRATION DENTAIRE INTERNATIONALE, 67th Annual World Dental Congress, Paris, France, October 20-26, 1979. Contact: FDI, 64 Wimpole Street, London W1M 8AL, U.K.

AMERICAN DENTAL ASSISTANTS' ASSOCIATION, Dallas, TX U.S.A., October 21-24, 1979. Contact: Ms. Patricia Cupkie, 666 Lake Shore Dr., SUITE 1130, Chicago, IL 60611, U.S.A.

AMERICAN DENTAL ASSOCIATION, One Hundred and Twentieth Annual Session, Dallas, Texas, U.S.A., October 21-25, 1979. Contact: American Dental Association, 211 East Chicago Ave., Chicago, IL 60611, U.S.A.

ACADEMY OF DENTISTRY INTERNATIONAL, Anaheim, California, October 22-23, 1979. Contact: Dr. Albert

Wasserman, 430 San Mateo Dr., Dan Mateo, CA 94401, U.S.A.

AMERICAN ACADEMY OF DENTAL GROUP PRACTICE, Dallas, TX U.S.A., October 24, 1979. Contact: Ms. Joann Junkins, 1709 Elka Lane, Madison, WI 53704, U.S.A.

AMERICAN ACADEMY OF MAXILLOFACIAL PROSTHETICS, New Orleans, La., U.S.A., October 27-31, 1979. Contact: Dr. J.W. Schweiger, V.A. Center, 1601 Kirkwood Hwy., Wilmington, DE 19805, U.S.A.

AMERICAN ACADEMY OF PERIODONTOLOGY, Seattle, WA U.S.A., October 31-November 3, 1979. Contact: Ms. Jean Pierson, 211 E. Chicago Ave., Suite 924, Chicago, IL 60611, U.S.A.

AMERICAN COLLEGE OF PROSTHODONTICS, Houston, Tx., U.S.A., October 30-November 1, 1979. Contact: Dr. Dean L. Johnson, 2708 Old Farm Lane, Edmond, OK 73034, U.S.A.

NOVEMBER

IV INTERNATIONAL CONGRESS-Golden Jubilee of the Academia de Estomatologia del Peru. Third Spanish-Latin American Dental Congress, Lima, Peru. November 14-17, 1979. Contact: Dr. Antonio Pinillo Soteros, Chota 760-Lima, Peru.

30TH ANNUAL SCIENTIFIC CONGRESS of the Korean Dental Association. Guarujá, Brazil, November 25-December 2, 1979. Contact: Rua Humaita 389, Cx. Postal 2523, C.E.P., 01321 — Sao Paulo, Brazil.

SOCIETY OF ORAL PHYSIOLOGY AND OCCLUSION, New York, N.Y., U.S.A., November 26, 1979. Contact: Mr. Irving Anderman, 3 Linden Pl., Middletown, NY 10020, U.S.A.

2ND WORLD CONGRESS ON PAIN AND ANXIETY CONTROL IN DENTISTRY, New Delhi, India. November 27-29, 1979. Contact: Dr. P. Virapin, 15 avenue de Maurin, 3400 Montpellier, France.

1980

FIRST INTERNATIONAL DENTAL CONFERENCE, Bombay, India, January 20-24, 1980. Contact: G.B. Shankwalker, Government Dental College and Hospital, Bombay 400001, India or Jangoo D. Kapadia, Sunkersett Mansion, Nan's Chowk, Bombay 400 007, India.

AUSTRALIAN DENTAL ASSOCIATION CONVENTION, Hobart, Australia, February 16-21, 1980. Contact: H. Hammer, 130 New Town Rd., New Town, Tas 7008, Australia.

EIGHTH AUSTRALIAN ORTHODONTIC CONGRESS, Perth, Australia. March 23-29, 1980. Contact: Hon. Secretary, Australian Society of Orthodontists, 179 St. George's Tce. Perth, W.A. 6000, Australia.

SCHWEIZERISCHE ZAHNÄRZTE-GESELLSCHAFT (SSO), Interlaken, Switzerland, May, 1980. Contact: Franz Plattner, Chefredaktor des Bulletins, Ottoplatz 21, 7000 Chur, Switzerland.

BRITISH DENTAL ASSOCIATION CENTENARY MEETING, London, England, July 10-11, 1980. Contact: R.B. Allen, secretary, British Dental Association, 64 Wimpole Street, London W1M 8AL, England.

FÉDÉRATION DENTAIRE INTERNATIONALE, International Dental Show, Hamburg, Germany. August 25-September 7, 1980. Contact: M. Jean-Pierre Schweizer, sales manager. Conference Travel of Canada Ltd., 11 Adelaide Street West, Suite 309, Toronto, Ont., Can., M5H 1L9.

FÉDÉRATION DENTAIRE INTERNATIONALE, 68th Annual World Dental Congress, Hamburg, Germany, September 2-7, 1980. Contact: Dr. R. Braun, Bundesverband der Deutschen Zahnärzte, Universitätsstrasse 73, 5000 Köln 41, Germany.

THIRD NATIONAL CONVENTION AND III INTERNATIONAL CONFERENCE OF ORAL HEALTH, Lima, Peru, October 1-4, 1980. Contact: Dr. Gilberto Dominguez, Av. Benavides 264-902, Lima 18, Peru, South America.

1981 —

Fédération Dentaire Internationale, 69TH ANNUAL WORLD DENTAL CONGRESS, Rio de Janeiro, Brazil, September 5-9, 1981.

Fédération Dentaire Internationale, 70TH ANNUAL WORLD DENTAL CONGRESS, Vienna, Austria, October 11-16, 1982.

Fédération Dentaire Internationale, 71ST ANNUAL WORLD DENTAL CONGRESS, Tokyo, Japan, October 1983.

Fédération Dentaire Internationale, 72ND ANNUAL WORLD DENTAL CONGRESS, Helsinki, Finland, August/September, 1984.

OFFICES AND PRACTICES

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BRITISH COLUMBIA — Victoria. Excellent opportunity. First floor space available for lease, air-conditioned suburban professional building. Golfing all year around, almost no snow, 10 minutes from salt water fishing. Contact: Dr. Fennell or Dr. Poy, 1677 Poplar Ave., Victoria, B.C. V8P 4K5, or phone: (604) 477-2565 after 6.00 p.m.

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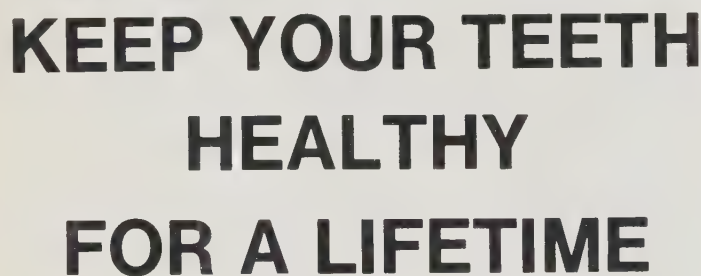
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Applications, nominations or inquiries should be sent to: Dr. P.M. Jackin, Chairman, Rehabilitative Dental Science, Faculty of Dentistry, University of Manitoba, 780 Bannatyne Ave., Winnipeg, Manitoba, R3E 0W3.

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MANITOBA — Winnipeg. Oral Surgeon certified to practise in Manitoba, required for a busy practice. Object partnership. Please submit qualifications and curriculum vitae, and recent photo to CDA Box Number 1892.

ONTARIO — Ottawa. Associate Required for quickly developing practice of rehabilitative orientation. South Ottawa. Reply to CDA Box Number 1889.

ONTARIO — St. Catharines. Associate required for preventive orientated Group Practice in a busy, modern, Cox-equipped Dental Centre. Reply to: Dr. D.C. Goode, 142 Linwell Road, St. Catharines, Ont. L2N 6N4 or phone: (416) 935-7531.

EASTERN ONTARIO. Associate required for modern dental practice, midway between Toronto and Montreal. Reply to CDA Box Number 1872.

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ALBERTA — Valleyview. Qualified dentist or dental surgeon wanted. The Town of Valleyview and surrounding district would be pleased to hear from a qualified dentist interested in locating in this progressive Alberta community. The town would do all it can to assist in re-location. For further information write to: Mayor R.C. Gillespie, P.O. Box 415, Valleyview, Alta. T0H 3N0, phone: (403) 524-3543 office, or (403) 524-3170 home; or Mr. W.D. Broadhurst, Town Administrator, Town of Valleyview, P.O. Box 270, Valleyview, Alta. T0H 3N0 or phone: (403) 524-3924 or 524-3971 office, (403) 524-4495 home.

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WASHINGTON — Seattle. Teaching And Research In Occlusion, University Of Washington, Department Of Restorative Dentistry. Full-time Faculty Appointment Available September 1, 1979: Applications are invited from individuals having completed an accredited postdoctoral graduate program in fixed prosthodontics or the equivalent. The postdoctoral program must have included the study of occlusion. Occlusal studies and subsequent experience should encompass the basic and applied sciences as well as clinical management of patients with acute and chronic dysfunction. Additional training in allied professional fields or educational methodology will be favourably considered in the overall evaluation of candidates. Obligations will include significant teaching responsibilities in both the predoctoral and postdoctoral curricula, as well as active involvement in a clinical research program. Academic rank and salary commensurate with education, qualifications, and experience. The University of Washington is an Affirmative Action, Equal Opportunity Employer. Review of applications commences July 1, 1979. Send inquiries and curriculum vitae to: Dr. John Townsend, chairman, Department of Restorative Dentistry, SM-56, School of Dentistry, University of Washington, Seattle, WA 98195, U.S.A.

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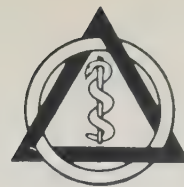
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Tickets will be sold for social activities and luncheons

SPOUSE: (other than dentists and auxiliaries) \$10. per person

Registration entitles to attend:
— Scientific activities
— Exhibitors Hall

Tickets will be sold for social activities and luncheons

PRESIDENT'S BALL

Monday, September 10, 1979 — \$35. per person

\$

LADIES PROGRAM (please mark what you would like to do)

POSSIBLE ACTIVITIES
FOR WHICH TICKETS
WILL BE SOLD AT
REGISTRATION DESK.

- Guided visits and tours
- Culinary demonstration
- Fashion show
- Wine and cheese tasting
- Boat tour on St. Lawrence River

☐
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Total \$

Registration BEFORE August 1st, 1979 entitles to the drawing of a trip to the 67th World Dental Congress (FDI) in Paris, October 20 to 26, 1979.

CANCELLATION: Money refunded ONLY if cancellation is made before August 1st, 1979.

Please make cheque or money order to: 1979 CDA NATIONAL CONVENTION

Mail to: 1575 St. Louis Road, Sillery, Quebec G1S 1G4

DATE

SIGNATURE

FORMULE DE RÉSERVATION DE CHAMBRE D'HÔTEL
HOTEL RESERVATION FORM

(LETTRES MOULÉES, S.V.P. — PLEASE PRINT)

Nom — Name

Adresse — Address

Dentiste	☐	Dentist
Hygiéniste	☐	Hygienist
Assistant(e)	☐	Assistant
Technicien(ne)	☐	Technician
.....	☐	

HÔTEL INDiquer 3 HÔTELS PAR ORDRE DE PRÉFÉRENCE
LIST 3 HOTELS IN ORDER OF PREFERENCE

	Simple Single	Jumeaux Twin	Double	Suite
1.	☐	☐	☐	☐
2.	☐	☐	☐	☐
3.	☐	☐	☐	☐

Date d'arrivée A.M. P.M. Date arriving

Date de départ A.M. P.M. Date departing

	Simple Single	Double Jumeaux / Twin	Suite
1. Hilton	\$44	\$54	\$134-416
2. Château Frontenac	\$42, 46, 52	\$52, 56, 62	\$100-200
3. Loews Le Concorde	\$45	\$55	\$90-400
4. Auberge des Gouverneurs	\$44.50	\$54.50	\$115-250
5. Holiday Inn	\$30	\$36	\$55

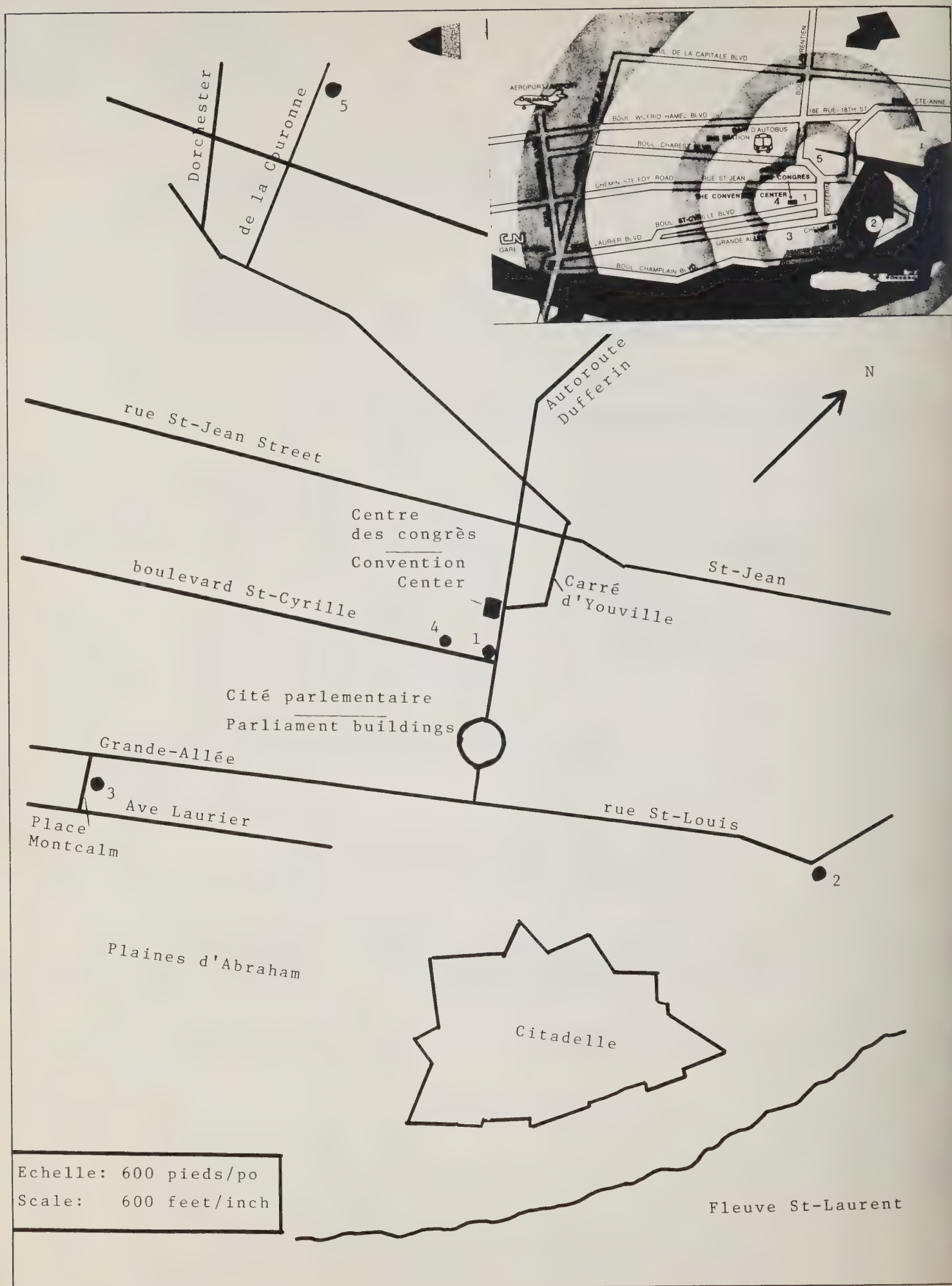
Date limite pour les demandes de réservations: 1er août 1979
Deadline for making advance reservations: August 1st, 1979

 Retourner cette formule de réservation avant le
1er août au secrétariat du congrès et NON À
L'HÔTEL.

 Return this reservation form before August 1st
to the convention headquarters and NOT TO THE
HOTEL.

 Toute modification ou annulation devra être faite, par
écrit, au secrétariat du congrès avant le 1^{er} août.

 All cancellations must be made in writing to the conven-
tion headquarters before August 1st.
SECRÉTARIAT DU CONGRÈS
CONVENTION HEADQUARTERS
 1575 chemin St-Louis
Sillery, Québec G1S 1G4
Tél. (418) 527-8969



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